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<120> Proteins and Nucleic Acids Encoding Same

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<170> PatentIn Ver. 2.1

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 <213> Homo sapiens

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Leu Met Pro Ser Lys Asp Asn Ser Gln Lys Thr Ser Val Leu Thr Gln
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Val Gly Val Ser Gln Gly His Asn Met Cys Pro Asp Pro Gly Ile Pro
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Glu Arg Gly Lys Arg Leu Gly Ser Asp Phe Arg Leu Gly Ser Ser Val

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Pro	Val	Cys	Arg	Ala	Arg	Met	Cys	Asp	Ala	His	Leu	Arg	Gly	Pro	Ser				
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Gly	Ile	Ile	Thr	Ser	Pro	Asn	Phe	Pro	Ile	Gln	Tyr	Asp	Asn	Asn	Ala				
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His	Cys	Val	Trp	Ile	Ile	Thr	Ala	Leu	Asn	Pro	Ser	Lys	Val	Ile	Lys				
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Leu	Ala	Phe	Glu	Glu	Phe	Asp	Leu	Glu	Arg	Gly	Tyr	Asp	Thr	Leu	Thr				
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Val	Gly	Asp	Gly	Gly	Gln	Asp	Gly	Asp	Gln	Lys	Thr	Val	Leu	Tyr	Met				
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Ser	Gln	Asn	Ala	Cys	Ser	Asp	Ser	Pro	His	Thr	Pro	Gly	Ser	Arg	Ile				
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Pro	Glu	Ser	Met	Ser	Gly	Asp	Ile	Trp	Arg	Gln	Lys	Trp	Thr	Val	Leu				
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Glu	Ile	Cys	Arg	Asp	Ile	Ser	Ser	Ser	Asp	Ala	Arg	Ser	Gly	Ser	Val				
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Arg	Lys	Ser	Pro	Lys	Thr	Ser	Asn	Ala	Val	Glu	Leu	Val	Ala	Pro	Gly				
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Thr	Glu	Ile	Glu	Gln	Gly	Ser	Cys	Gly	Asp	Pro	Gly	Ile	Pro	Ala	Tyr				
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Glu	Cys	Gln	Pro	Ala	Phe	Glu	Leu	Val	Gly	Gln	Lys	Ala	Ile	Thr	Cys				
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Gln	Lys	Asn	Asn	Gln	Trp	Ser	Ala	Lys	Lys	Pro	Gly	Cys	Val	Phe	Ser				
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Cys	Phe	Phe	Asn	Phe	Thr	Ser	Pro	Ser	Gly	Val	Val	Leu	Ser	Pro	Asn				
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Tyr	Pro	Glu	Asp	Tyr	Gly	Asn	His	Leu	His	Cys	Val	Trp	Leu	Ile	Leu				
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Ala	Arg	Pro	Glu	Ser	Arg	Ile	His	Leu	Ala	Phe	Asn	Asp	Ile	Asp	Val				
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Ala Pro Val Leu Gly Thr Phe Ser Gly Asn Gln Leu Pro Ser Ser Ile						
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Thr Ser Ser Gly His Val Ala Arg Leu Glu Phe Gln Thr Asp His Ser						
	420			425		430
Thr Gly Lys Arg Gly Phe Asn Ile Thr Phe Thr Thr Phe Arg His Asn						
	435			440		445
Glu Cys Pro Asp Pro Gly Val Pro Val Asn Gly Lys Arg Phe Gly Asp						
	450			455		460
Ser Leu Gln Leu Gly Ser Ser Ile Ser Phe Leu Cys Asp Glu Gly Phe						
	465			470		475
Leu Gly Thr Gln Gly Ser Glu Thr Ile Thr Cys Val Leu Lys Glu Gly						
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Ser Val Val Trp Asn Ser Ala Val Leu Arg Cys Glu Ala Pro Cys Gly						
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Gly His Leu Thr Ser Pro Ser Gly Thr Ile Leu Ser Pro Gly Trp Pro						
				515		520
Gly Phe Tyr Lys Asp Ala Leu Ser Cys Ala Trp Val Ile Glu Ala Gln						
				530		535
Pro Gly Tyr Pro Ile Lys Ile Thr Phe Asp Arg Phe Lys Thr Glu Val						
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Asn Tyr Asp Thr Leu Glu Val Arg Asp Gly Arg Thr Tyr Ser Ala Pro						
				565		570
Leu Ile Gly Val Tyr His Gly Thr Gln Val Pro Gln Phe Leu Ile Ser						
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Thr Ser Asn Tyr Leu Tyr Leu Leu Phe Ser Thr Asp Lys Ser His Ser						
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Asp Ile Gly Phe Gln Leu Arg Tyr Glu Thr Ile Thr Leu Gln Ser Asp						
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His Cys Leu Asp Pro Gly Ile Pro Val Asn Gly Gln Arg His Gly Asn						
				625		630
Asp Phe Tyr Val Gly Ala Leu Val Thr Phe Ser Cys Asp Ser Gly Tyr						
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Thr Leu Ser Asp Gly Glu Pro Leu Glu Cys Glu Pro Asn Phe Gln Trp						
				660		665
Ser Arg Ala Leu Pro Ser Cys Glu Ala Leu Cys Gly Gly Phe Ile Gln						
				675		680
Gly Ser Ser Gly Thr Ile Leu Ser Pro Gly Phe Pro Asp Phe Tyr Pro						





995	1000	1005
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Thr Cys Val Ala Glu Cys Gly Gly Thr Val Arg Gly Glu Val Ser Gly 1025 1030 1035 1040		
Gln Val Leu Ser Pro Gly Tyr Pro Ala Pro Tyr Glu His Asn Leu Asn 1045 1050 1055		
Cys Ile Trp Thr Ile Glu Ala Glu Ala Gly Cys Thr Ile Gly Leu His 1060 1065 1070		
Phe Leu Val Phe Asp Thr Glu Glu Val His Asp Val Leu Arg Ile Trp 1075 1080 1085		
Asp Gly Pro Val Glu Ser Gly Val Leu Leu Lys Glu Leu Ser Gly Pro 1090 1095 1100		
Ala Leu Pro Lys Asp Leu His Ser Thr Phe Asn Ser Val Val Leu Gln 1105 1110 1115 1120		
Phe Ser Thr Asp Phe Phe Thr Ser Lys Gln Gly Phe Ala Ile Gln Phe 1125 1130 1135		
Ser Val Ser Thr Ala Thr Ser Cys Asn Asp Pro Gly Ile Pro Gln Asn 1140 1145 1150		
Gly Ser Arg Ser Gly Asp Ser Trp Glu Ala Gly Asp Ser Thr Val Phe 1155 1160 1165		
Gln Cys Asp Pro Gly Tyr Ala Leu Gln Gly Ser Ala Glu Ile Ser Cys 1170 1175 1180		
Val Lys Ile Glu Asn Arg Phe Phe Trp Gln Pro Ser Pro Pro Thr Cys 1185 1190 1195 1200		
Ile Ala Pro Cys Gly Gly Asp Leu Thr Gly Pro Ser Gly Val Ile Leu 1205 1210 1215		
Ser Pro Asn Tyr Pro Glu Pro Tyr Pro Pro Gly Lys Glu Cys Asp Trp 1220 1225 1230		
Lys Val Thr Val Ser Pro Asp Tyr Val Ile Ala Leu Val Phe Asn Ile 1235 1240 1245		
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Asp Ser Leu Ser Pro Leu Ile Gly Ser Phe Tyr Gly Ser Gln Leu Pro 1265 1270 1275 1280		
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Asp Ala Ser Val Ser Asn Ala Gly Phe Val Ile Asp Tyr Thr Glu Asn		

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Val Gly Ser Asp Leu Lys Leu Gly Ser Ser Val Thr Tyr Tyr Cys His		
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Gly Gly Tyr Glu Val Glu Gly Thr Ser Thr Leu Ser Cys Ile Leu Gly		
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Pro Asp Gly Lys Pro Val Trp Asn Asn Pro Arg Pro Val Cys Thr Ala		
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Pro Cys Gly Gly Gln Tyr Val Gly Ser Asp Gly Val Val Leu Ser Pro		
1380	1385	1390
Asn Tyr Pro Gln Asn Tyr Thr Ser Gly Gln Ile Cys Leu Tyr Phe Val		
1395	1400	1405
Thr Val Pro Lys Asp Tyr Val Val Phe Gly Gln Phe Ala Phe Phe His		
1410	1415	1420
Thr Ala Leu Asn Asp Val Val Glu Val His Asp Gly His Ser Gln His		
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Ser Arg Leu Leu Ser Ser Leu Ser Gly Ser His Thr Gly Glu Ser Leu		
1445	1450	1455
Pro Leu Ala Thr Ser Asn Gln Val Leu Ile Lys Phe Ser Ala Lys Gly		
1460	1465	1470
Leu Ala Pro Ala Arg Gly Phe His Phe Val Tyr Gln Ala Val Pro Arg		
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Thr Ser Ala Thr Gln Cys Ser Ser Val Pro Glu Pro Arg Tyr Gly Lys		
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Arg Leu Gly Ser Asp Phe Ser Val Gly Ala Ile Val Arg Phe Glu Cys		
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Asn Ser Gly Tyr Ala Leu Gln Gly Ser Pro Glu Ile Glu Cys Leu Pro		
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Val Pro Gly Ala Leu Ala Gln Trp Asn Val Ser Ala Pro Thr Cys Val		
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Val Pro Cys Gly Gly Asn Leu Thr Glu Arg Arg Gly Thr Ile Leu Ser		
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Pro Gly Phe Pro Glu Pro Tyr Leu Asn Ser Leu Asn Cys Val Trp Lys		
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Leu Ser Ser Cys Pro Glu Pro Ala Val Pro Ser Asn Gly Val Lys Thr		
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Gly Glu Arg Tyr Leu Val Asn Asp Val Val Ser Phe Gln Cys Glu Pro		
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Gly Tyr Ala Leu Gln Gly His Ala His Ile Ser Cys Met Pro Gly Thr		
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Val Gly Phe Gly Ala His Ile Gln Phe Leu Asn Phe Ser Thr Glu Pro		
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Asn His Asp Tyr Ile Glu Ile Arg Asn Gly Pro Tyr Glu Thr Ser Arg		
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Arg Pro Gly Phe Lys Leu Glu Tyr Gln Ala Tyr Glu Leu Gln Glu Cys		
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Pro Asp Pro Glu Pro Phe Ala Asn Gly Ile Val Arg Gly Ala Gly Tyr		
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Asn Val Gly Gln Ser Val Thr Phe Glu Cys Leu Pro Gly Tyr Gln Leu		
1860	1865	1870
Thr Gly His Pro Val Leu Thr Cys Gln His Gly Thr Asn Arg Asn Trp		
1875	1880	1885
Asp His Pro Leu Pro Lys Cys Glu Val Pro Cys Gly Gly Asn Ile Thr		
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Ser Ser Asn Gly Thr Val Tyr Ser Pro Gly Phe Pro Ser Pro Tyr Ser		

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Val Arg Leu Asn Leu Ser Leu Leu Gln Thr Glu Pro Ser Gly Asp Phe			
1940	1945	1950	
Ile Thr Ile Trp Asp Gly Pro Gln Gln Thr Ala Pro Arg Leu Gly Val			
1955	1960	1965	
Phe Thr Arg Ser Met Ala Lys Lys Thr Val Gln Ser Ser Ser Asn Gln			
1970	1975	1980	
Val Leu Leu Lys Phe His Arg Asp Ala Ala Thr Gly Gly Ile Phe Ala			
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Ile Ala Phe Ser Ala Tyr Pro Leu Thr Lys Cys Pro Pro Pro Thr Ile			
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2020	2025	2030	
Asp Ile Val Arg Tyr Arg Cys Leu Pro Gly Phe Thr Leu Val Gly Asn			
2035	2040	2045	
Glu Ile Leu Thr Cys Lys Leu Gly Thr Tyr Leu Gln Phe Glu Gly Pro			
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Pro Pro Ile Cys Glu Val His Cys Pro Thr Asn Glu Leu Leu Thr Asp			
2065	2070	2075	2080
Ser Thr Gly Val Ile Leu Ser Gln Ser Tyr Pro Gly Ser Tyr Pro Gln			
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Ser Leu Thr Val Glu Tyr Phe Leu Ser Glu Lys Gln Tyr Asp Glu Phe			
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Glu Ile Phe Asp Gly Pro Ser Gly Gln Ser Pro Leu Leu Lys Ala Leu			
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Ser Gly Asn Tyr Ser Ala Pro Leu Ile Val Thr Ser Ser Ser Asn Ser			
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Val Tyr Leu Arg Trp Ser Ser Asp His Ala Tyr Asn Arg Lys Gly Phe			
2165	2170	2175	
Lys Ile Arg Tyr Ser Ala Pro Tyr Cys Ser Leu Pro Arg Ala Pro Leu			
2180	2185	2190	
His Gly Phe Ile Leu Gly Gln Thr Ser Thr Gln Pro Gly Gly Ser Ile			
2195	2200	2205	
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Ile Cys Thr Arg His Pro Gln Gly Tyr His Leu Trp Ser Glu Ala Ile		
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2245	2250	2255
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2275	2280	2285
Glu Cys Leu Asp Thr Gly Leu Trp Ser Asn Arg Asn Val Pro Pro Gln		
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Cys Val Arg Glu Ser Ser Gly Asn Gly Gly Gly Ser Val Thr Cys Pro		
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Asp Val Ser Ser Ile Ser Val Glu His Gly Arg Trp Arg Leu Ile Phe		
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Glu Thr Gln Tyr Gln Phe Gln Ala Gln Leu Met Leu Ile Cys Asp Pro		
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Gly Tyr Tyr Tyr Thr Gly Gln Arg Val Ile Arg Cys Gln Ala Asn Gly		
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Trp Ser Gly Lys Thr Pro Phe Cys Val His Val Lys Gln Gln Leu Leu		

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Ser Gly Ala Ile Thr Cys Gly His Pro Gly Asn Pro Val Asn Gly Leu		
2545	2550	2555
Thr Gln Gly Asn Gln Phe Asn Leu Asn Asp Val Val Lys Phe Val Cys		
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	2580	2585
Ser Gly Gln Trp Ser Asp Met Leu Pro Thr Cys Arg Ile Ile Asn Cys		
	2595	2600
Thr Asp Pro Gly His Gln Glu Asn Ser Val Arg Gln Val His Ala Ser		
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Gly Pro His Arg Phe Ser Phe Gly Thr Thr Val Ser Tyr Arg Cys Asn		
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Glu Ile Arg Ala Asp Ala His Val Arg Gly Tyr Val Gly Glu Lys Ile
      35             40             45

Lys Leu Lys Cys Thr Phe Lys Ser Thr Ser Asp Val Thr Asp Lys Leu
      50             55             60

Thr Ile Asp Trp Thr Tyr Arg Pro Pro Ser Ser Ser His Thr Val Ser
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cctatcttta ataagtaaga gaatatttag accatt 1896

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<210> 10  
 <211> 476  
 <212> PRT  
 <213> Homo sapiens

<400> 10  
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                     20                    25                    30  
  
 Val Asp Tyr His Tyr Ser Arg Gln Tyr Pro Val Phe Arg Gly Arg Pro  
                     35                    40                    45  
  
 Ser Gly Asn Glu Ser Gln His Arg Leu Asp Phe Gln Leu Met Leu Lys  
                     50                    55                    60  
  
 Ile Arg Asp Thr Leu Tyr Ile Ala Gly Arg Asp Gln Val Tyr Thr Val  
                     65                    70                    75                    80  
  
 Asn Leu Asn Glu Met Pro Lys Thr Glu Val Ile Pro Asn Lys Lys Leu  
                     85                    90                    95  
  
 Thr Trp Arg Ser Arg Gln Gln Asp Arg Glu Asn Cys Ala Met Lys Gly  
                     100                    105                    110  
  
 Lys His Lys Asp Glu Cys His Asn Phe Ile Lys Val Phe Val Pro Arg  
                     115                    120                    125

Asn	Asp	Glu	Met	Val	Phe	Val	Cys	Gly	Thr	Asn	Ala	Phe	Asn	Pro	Met	130	135	140
Cys	Arg	Tyr	Tyr	Arg	Leu	Ser	Thr	Leu	Glu	Tyr	Asp	Gly	Glu	Glu	Ile	145	150	155
Ser	Gly	Leu	Ala	Arg	Cys	Pro	Phe	Asp	Ala	Arg	Gln	Thr	Asn	Val	Ala	165	170	175
Leu	Phe	Ala	Asp	Gly	Lys	Leu	Tyr	Ser	Ala	Thr	Val	Ala	Asp	Phe	Leu	180	185	190
Ala	Ser	Asp	Ala	Val	Ile	Tyr	Arg	Ser	Met	Gly	Asp	Gly	Ser	Ala	Leu	195	200	205
Arg	Thr	Ile	Lys	Tyr	Asp	Ser	Lys	Trp	Ile	Lys	Glu	Pro	His	Phe	Leu	210	215	220
His	Ala	Ile	Glu	Tyr	Gly	Asn	Tyr	Val	Tyr	Phe	Phe	Phe	Arg	Glu	Ile	225	230	235
Ala	Val	Glu	His	Asn	Asn	Leu	Gly	Lys	Ala	Val	Tyr	Ser	Arg	Val	Ala	245	250	255
Arg	Ile	Cys	Lys	Asn	Asp	Met	Gly	Gly	Ser	Gln	Arg	Val	Leu	Glu	Lys	260	265	270
His	Trp	Thr	Ser	Phe	Leu	Lys	Ala	Arg	Leu	Asn	Cys	Ser	Val	Pro	Gly	275	280	285
Asp	Ser	Phe	Phe	Tyr	Phe	Asp	Val	Leu	Gln	Ser	Ile	Thr	Asp	Ile	Ile	290	295	300
Gln	Ile	Asn	Gly	Ile	Pro	Thr	Val	Val	Gly	Val	Phe	Thr	Thr	Gln	Leu	305	310	315
Asn	Ser	Ile	Pro	Gly	Ser	Ala	Val	Cys	Ala	Phe	Ser	Met	Asp	Asp	Ile	325	330	335
Glu	Lys	Val	Phe	Lys	Gly	Arg	Phe	Lys	Glu	Gln	Lys	Thr	Pro	Asp	Ser	340	345	350
Val	Trp	Thr	Ala	Val	Pro	Glu	Asp	Lys	Val	Pro	Lys	Pro	Arg	Pro	Gly	355	360	365
Cys	Cys	Ala	Lys	His	Gly	Leu	Ala	Glu	Ala	Tyr	Lys	Thr	Ser	Ile	Asp	370	375	380
Phe	Pro	Asp	Glu	Thr	Leu	Ser	Phe	Ile	Lys	Ser	His	Pro	Leu	Met	Asp	385	390	395
Ser	Ala	Val	Pro	Pro	Ile	Ala	Asp	Glu	Pro	Trp	Phe	Thr	Lys	Thr	Arg	405	410	415
Val	Arg	Tyr	Arg	Leu	Thr	Ala	Ile	Ser	Val	Asp	His	Ser	Ala	Gly	Pro	420	425	430



Tyr Gln Asn Tyr Thr Val Ile Phe Val Gly Ser Glu Ala Gly Met Val  
 435 440 445

Leu Lys Val Leu Ala Lys Thr Ser Pro Phe Ser Leu Asn Asp Ser Val  
 450 455 460

Leu Leu Glu Glu Ile Glu Ala Tyr Asn His Ala Lys  
 465 470 475

<210> 11  
 <211> 3205  
 <212> DNA  
 <213> Homo sapiens

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 gatgatgaac cccttaatac tgtcgactat cactgtaagt cgtctaggca atatccggtt 180  
 ttttagaggac gcccttcagg caatgaatcg cagcacaggc tggactttca gctgatgttg 240  
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 gaaatgcccc aaacagaagt aatatggcaa cagaaactga catggcgatc aagacaacag 360  
 gatcgagaaa actgtgctat gaaaggcaag cataaagatg aatgccaca ctttatcaaa 420  
 gtatttgttc caagaaacga tgagatgggt tttgtttgtg gtaccaatgc attcaatccc 480  
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 cttcatgcca tagaatatgg aaactatgtc tatttcttct ttcgagaaat cgctgtcgaa 780  
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 gacaaaaagg tcatctcatt acagttggat aaagatcacc acgctttata tgtggcggtt 1560  
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 caacctccag agttggctgc tcttctact cctgagtcta caccctgtgc tcaccagaag 2280  
 accctgcagg ccatgaagag ccactcagaa aaggcccatg gccatggagc ttcaaggaaa 2340  
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<210> 12

<211> 1035

<212> PRT

<213> Homo sapiens

<400> 12

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Met Arg Val Phe Leu Leu Cys Ala Tyr Ile Leu Leu Leu Met Val Ser
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Gln Leu Arg Ala Val Ser Phe Pro Glu Asp Asp Glu Pro Leu Asn Thr
      20              25              30

```

```

Val Asp Tyr His Cys Lys Ser Ser Arg Gln Tyr Pro Val Phe Arg Gly
      35              40              45

```

```

Arg Pro Ser Gly Asn Glu Ser Gln His Arg Leu Asp Phe Gln Leu Met
      50              55              60

```

```

Leu Lys Ile Arg Asp Thr Leu Tyr Ile Ala Gly Arg Asp Gln Val Tyr
      65              70              75              80

```

```

Thr Val Asn Leu Asn Glu Met Pro Lys Thr Glu Val Ile Trp Gln Gln
      85              90              95

```

```

Lys Leu Thr Trp Arg Ser Arg Gln Gln Asp Arg Glu Asn Cys Ala Met
      100             105             110

```

```

Lys Gly Lys His Lys Asp Glu Cys His Asn Phe Ile Lys Val Phe Val
      115             120             125

```

```

Pro Arg Asn Asp Glu Met Val Phe Val Cys Gly Thr Asn Ala Phe Asn
      130             135             140

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```

Pro Met Cys Arg Tyr Tyr Arg Val Ser Thr Leu Glu Tyr Asp Gly Glu
      145             150             155             160

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```

Glu Ile Ser Gly Leu Ala Arg Cys Pro Phe Asp Ala Arg Gln Thr Asn
      165             170             175

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Val Ala Leu Phe Ala Asp Gly Lys Leu Tyr Ser Ala Thr Val Ala Asp
      180             185             190

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Phe Leu Ala Ser Asp Ala Val Ile Tyr Arg Ser Met Gly Asp Gly Ser  
195 200 205  
Ala Leu Arg Thr Ile Lys Tyr Asp Ser Lys Trp Ile Lys Glu Pro His  
210 215 220  
Phe Leu His Ala Ile Glu Tyr Gly Asn Tyr Val Tyr Phe Phe Phe Arg  
225 230 235 240  
Glu Ile Ala Val Glu His Asn Asn Leu Gly Lys Ala Val Tyr Ser Arg  
245 250 255  
Val Ala Arg Ile Cys Lys Asn Asp Met Gly Gly Ser Gln Arg Val Leu  
260 265 270  
Glu Lys His Trp Thr Ser Phe Leu Lys Ala Arg Leu Asn Cys Ser Val  
275 280 285  
Pro Gly Asp Ser Phe Phe Tyr Phe Asp Val Leu Gln Ser Ile Thr Asp  
290 295 300  
Ile Ile Gln Ile Asn Gly Ile Pro Thr Val Val Gly Val Phe Thr Thr  
305 310 315 320  
Gln Leu Asn Ser Ile Pro Gly Ser Ala Val Cys Ala Phe Ser Met Asp  
325 330 335  
Asp Ile Glu Lys Val Phe Lys Gly Arg Phe Lys Glu Gln Lys Thr Pro  
340 345 350  
Asp Ser Val Trp Thr Ala Val Pro Glu Asp Lys Val Pro Lys Pro Arg  
355 360 365  
Pro Gly Cys Cys Ala Lys His Gly Leu Ala Glu Ala Tyr Lys Thr Ser  
370 375 380  
Ile Asp Phe Pro Asp Glu Thr Leu Ser Phe Ile Lys Ser His Pro Leu  
385 390 395 400  
Met Asp Ser Ala Val Pro Pro Ile Ala Asp Glu Pro Trp Phe Thr Lys  
405 410 415  
Thr Arg Val Arg Tyr Arg Leu Thr Ala Ile Ser Val Asp His Ser Ala  
420 425 430  
Gly Pro Tyr Gln Asn Tyr Thr Val Ile Phe Val Gly Ser Glu Ala Gly  
435 440 445  
Met Val Leu Lys Val Leu Ala Lys Thr Ser Pro Phe Ser Leu Asn Asp  
450 455 460  
Ser Val Leu Leu Glu Glu Ile Glu Ala Tyr Asn His Ala Lys Cys Ser  
465 470 475 480  
Ala Glu Asn Glu Glu Asp Lys Lys Val Ile Ser Leu Gln Leu Asp Lys  
485 490 495

Asp His His Ala Leu Tyr Val Ala Phe Ser Ser Cys Ile Ile Arg Ile  
 500 505 510  
 Pro Leu Ser Arg Cys Glu Arg Tyr Gly Ser Cys Lys Lys Ser Cys Ile  
 515 520 525  
 Ala Ser Arg Asp Pro Tyr Cys Gly Trp Leu Ser Gln Gly Ser Cys Gly  
 530 535 540  
 Arg Val Thr Pro Asn His Ser Ala Glu Gly Tyr Glu Gln Asp Thr Glu  
 545 550 555 560  
 Phe Gly Asn Thr Ala His Leu Gly Asp Cys His Ala Tyr Glu Pro Tyr  
 565 570 575  
 Glu Gly Arg Val Gly Ser Leu Lys Ala Ile Cys Tyr Leu Leu Leu Phe  
 580 585 590  
 Leu Lys Ser Thr Leu Phe Thr Leu Ser His Val Ser Ile Ser Gly Val  
 595 600 605  
 Arg Trp Glu Val Gln Ser Gly Glu Ser Asn Gln Met Val His Met Asn  
 610 615 620  
 Val Leu Ile Thr Cys Val Phe Ala Ala Phe Val Leu Gly Ala Phe Ile  
 625 630 635 640  
 Ala Gly Val Ala Val Tyr Cys Tyr Arg Asp Met Phe Val Arg Lys Asn  
 645 650 655  
 Arg Lys Ile His Lys Asp Ala Glu Ser Ala Gln Ser Cys Thr Asp Ser  
 660 665 670  
 Ser Gly Ser Phe Ala Lys Leu Asn Gly Leu Phe Asp Ser Pro Val Lys  
 675 680 685  
 Glu Tyr Gln Gln Asn Ile Asp Ser Pro Lys Leu Tyr Ser Asn Leu Leu  
 690 695 700  
 Thr Ser Arg Lys Glu Leu Pro Pro Asn Gly Asp Thr Lys Ser Met Val  
 705 710 715 720  
 Met Asp His Arg Gly Gln Pro Pro Glu Leu Ala Ala Leu Pro Thr Pro  
 725 730 735  
 Glu Ser Thr Pro Val Leu His Gln Lys Thr Leu Gln Ala Met Lys Ser  
 740 745 750  
 His Ser Glu Lys Ala His Gly His Gly Ala Ser Arg Lys Glu Thr Pro  
 755 760 765  
 Gln Phe Phe Pro Ser Ser Pro Pro Pro His Ser Pro Leu Ser His Gly  
 770 775 780  
 His Ile Pro Ser Ala Ile Val Leu Pro Asn Ala Thr His Asp Tyr Asn  
 785 790 795 800

Thr Ser Phe Ser Asn Ser Asn Ala His Lys Ala Glu Lys Lys Leu Gln  
 805 810 815  
 Asn Ile Asp His Pro Leu Thr Lys Ser Ser Ser Lys Arg Asp His Arg  
 820 825 830  
 Arg Ser Val Asp Ser Arg Asn Thr Leu Asn Asp Leu Leu Lys His Leu  
 835 840 845  
 Asn Asp Pro Asn Ser Asn Pro Lys Ala Ile Met Gly Asp Ile Gln Met  
 850 855 860  
 Ala His Gln Asn Leu Met Leu Asp Pro Met Gly Ser Met Ser Glu Val  
 865 870 875 880  
 Pro Pro Lys Val Pro Asn Arg Glu Ala Ser Leu Tyr Ser Pro Pro Ser  
 885 890 895  
 Thr Leu Pro Arg Asn Ser Pro Thr Lys Arg Val Asp Val Pro Thr Thr  
 900 905 910  
 Pro Gly Val Pro Met Thr Ser Leu Glu Arg Gln Arg Gly Tyr His Lys  
 915 920 925  
 Asn Ser Ser Gln Arg His Ser Ile Ser Ala Met Pro Lys Asn Leu Asn  
 930 935 940  
 Ser Pro Asn Gly Val Leu Leu Ser Arg Gln Pro Ser Met Asn Arg Gly  
 945 950 955 960  
 Gly Tyr Met Pro Thr Pro Thr Gly Ala Lys Val Asp Tyr Ile Gln Gly  
 965 970 975  
 Thr Pro Val Ser Val His Leu Gln Pro Ser Leu Ser Arg Gln Ser Ser  
 980 985 990  
 Tyr Thr Ser Asn Gly Thr Leu Pro Arg Thr Gly Leu Lys Arg Thr Pro  
 995 1000 1005  
 Ser Leu Lys Pro Asp Val Pro Pro Lys Pro Ser Phe Val Pro Gln Thr  
 1010 1015 1020  
 Pro Ser Val Arg Pro Leu Asn Lys Tyr Thr Tyr  
 1025 1030 1035

<210> 13  
 <211> 2191  
 <212> DNA  
 <213> Homo sapiens

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 gatgatgaac cccttaatac tgtcgactat cactgtaagt cgtctaggca atatccggtt 180  
 ttttagaggac gcccttcagg caatgaatcg cagcacaggc tggactttca gctgatgttg 240

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aaaattcgag acacacttta tattgctggc agggatcaag tttatacagt aaacttaaat 300
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gatcgagaaa actgtgctat gaaaggcaag cataaagatg aatgccacaa ctttatcaaa 420
gtatttgttc caagaaacga tgagatgggtt tttgtttgtg gtaccaatgc attcaatccc 480
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<210> 14  
 <211> 712  
 <212> PRT  
 <213> Homo sapiens

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 Val Asp Tyr His Cys Lys Ser Ser Arg Gln Tyr Pro Val Phe Arg Gly  
 35 40 45  
 Arg Pro Ser Gly Asn Glu Ser Gln His Arg Leu Asp Phe Gln Leu Met  
 50 55 60  
 Leu Lys Ile Arg Asp Thr Leu Tyr Ile Ala Gly Arg Asp Gln Val Tyr  
 65 70 75 80  
 Thr Val Asn Leu Asn Glu Met Pro Lys Thr Glu Val Ile Trp Gln Gln



385		390		395		400									
Met	Asp	Ser	Ala	Val	Pro	Pro	Ile	Ala	Asp	Glu	Pro	Trp	Phe	Thr	Lys
				405					410					415	
Thr	Arg	Val	Arg	Tyr	Arg	Leu	Thr	Ala	Ile	Ser	Val	Asp	His	Ser	Ala
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Gly	Pro	Tyr	Gln	Asn	Tyr	Thr	Val	Ile	Phe	Val	Gly	Ser	Glu	Ala	Gly
		435					440					445			
Met	Val	Leu	Lys	Val	Leu	Ala	Lys	Thr	Ser	Pro	Phe	Ser	Leu	Asn	Asp
	450					455					460				
Ser	Val	Leu	Leu	Glu	Glu	Ile	Glu	Ala	Tyr	Asn	His	Ala	Lys	Cys	Ser
465					470					475					480
Ala	Glu	Asn	Glu	Glu	Asp	Lys	Lys	Val	Ile	Ser	Leu	Gln	Leu	Asp	Lys
				485					490					495	
Asp	His	His	Ala	Leu	Tyr	Val	Ala	Phe	Ser	Ser	Cys	Ile	Ile	Arg	Ile
			500					505					510		
Pro	Leu	Ser	Arg	Cys	Glu	Arg	Tyr	Gly	Ser	Cys	Lys	Lys	Ser	Cys	Ile
		515					520					525			
Ala	Ser	Arg	Asp	Pro	Tyr	Cys	Gly	Trp	Leu	Ser	Gln	Gly	Ser	Cys	Gly
		530				535					540				
Arg	Val	Thr	Pro	Gly	Met	Leu	Leu	Leu	Thr	Glu	Asp	Phe	Phe	Ala	Phe
545					550					555					560
His	Asn	His	Ser	Ala	Glu	Gly	Tyr	Glu	Gln	Asp	Thr	Glu	Phe	Gly	Asn
				565					570					575	
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Gln Leu Asn Ser Ile Pro Gly Ser Ala Val Cys Ala Phe Ser Met Asp 325 330 335		
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Pro Gly Cys Cys Ala Lys His Gly Leu Ala Glu Ala Tyr Lys Thr Ser 370 375 380		
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Gly Pro Tyr Gln Asn Tyr Thr Val Ile Phe Val Gly Ser Glu Ala Gly 435 440 445		
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Pro Leu Ser Arg Cys Glu Arg Tyr Gly Ser Cys Lys Lys Ser Cys Ile		

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Thr	Cys	Val	Phe	Ala	Ala	Phe	Val	Leu	Gly	Ala	Phe	Ile	Ala	Gly	Val
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Arg Pro Ser Gly Asn Glu Ser Gln His Arg Leu Asp Phe Gln Leu Met
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Leu Lys Ile Arg Asp Thr Leu Tyr Ile Ala Gly Arg Asp Gln Val Tyr
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 Pro Met Cys Arg Tyr Tyr Arg Val Ser Thr Leu Glu Tyr Asp Gly Glu  
 145 150 155 160  
 Glu Ile Ser Gly Leu Ala Arg Cys Pro Phe Asp Ala Arg Gln Thr Asn  
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 Val Ala Leu Phe Ala Asp Gly Lys Leu Tyr Ser Ala Thr Val Ala Asp  
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 Gln Leu Asn Ser Ile Pro Gly Ser Ala Val Cys Ala Phe Ser Met Asp  
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 Asp Ser Val Trp Thr Ala Val Pro Glu Asp Lys Val Pro Lys Pro Arg  
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 His Asn His Ser Ala Glu Gly Tyr Glu Gln Asp Thr Glu Phe Gly Asn  
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 Pro Asp Tyr Lys Ile Phe Gly Gly Pro Thr Ser Asp Met Glu Val Ser  
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 Ser Ser Ser Val Thr Thr Met Ala Ser Ile Pro Glu Ile Thr Pro Lys  
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 Val Ile Asp Thr Trp Arg Pro Lys Leu Thr Ser Ser Arg Lys Phe Val  
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Phe Val Arg Lys Asn Arg Lys Ile His Lys Asp Ala Glu Ser Ala Gln  
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 Ser Cys Thr Asp Ser Ser Gly Ser Phe Ala Lys Leu Asn Gly Leu Phe  
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 755 760 765

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 <212> DNA  
 <213> Homo sapiens

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<212> PRT  
<213> Homo sapiens

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Val Asp Tyr His Cys Lys Ser Ser Arg Gln Tyr Pro Val Phe Arg Gly  
35 40 45  
Arg Pro Ser Gly Asn Glu Ser Gln His Arg Leu Asp Phe Gln Leu Met  
50 55 60  
Leu Lys Ile Arg Asp Thr Leu Tyr Ile Ala Gly Arg Asp Gln Val Tyr  
65 70 75 80  
Thr Val Asn Leu Asn Glu Met Pro Lys Thr Glu Val Ile Trp Gln Gln  
85 90 95  
Lys Leu Thr Trp Arg Ser Arg Gln Gln Asp Arg Glu Asn Cys Ala Met  
100 105 110  
Lys Gly Lys His Lys Asp Glu Cys His Asn Phe Ile Lys Val Phe Val  
115 120 125  
Pro Arg Asn Asp Glu Met Val Phe Val Cys Gly Thr Asn Ala Phe Asn  
130 135 140

Pro	Met	Cys	Arg	Tyr	Tyr	Arg	Val	Ser	Thr	Leu	Glu	Tyr	Asp	Gly	Glu	145	150	155	160
Glu	Ile	Ser	Gly	Leu	Ala	Arg	Cys	Pro	Phe	Asp	Ala	Arg	Gln	Thr	Asn	165	170	175	
Val	Ala	Leu	Phe	Ala	Asp	Gly	Lys	Leu	Tyr	Ser	Ala	Thr	Val	Ala	Asp	180	185	190	
Phe	Leu	Ala	Ser	Asp	Ala	Val	Ile	Tyr	Arg	Ser	Met	Gly	Asp	Gly	Ser	195	200	205	
Ala	Leu	Arg	Thr	Ile	Lys	Tyr	Asp	Ser	Lys	Trp	Ile	Lys	Glu	Pro	His	210	215	220	
Phe	Leu	His	Ala	Ile	Glu	Tyr	Gly	Asn	Tyr	Val	Tyr	Phe	Phe	Phe	Arg	225	230	235	240
Glu	Ile	Ala	Val	Glu	His	Asn	Asn	Leu	Gly	Lys	Ala	Val	Tyr	Ser	Arg	245	250	255	
Val	Ala	Arg	Ile	Cys	Lys	Asn	Asp	Met	Gly	Gly	Ser	Gln	Arg	Val	Leu	260	265	270	
Glu	Lys	His	Trp	Thr	Ser	Phe	Leu	Lys	Ala	Arg	Leu	Asn	Cys	Ser	Val	275	280	285	
Pro	Gly	Asp	Ser	Phe	Phe	Tyr	Phe	Asp	Val	Leu	Gln	Ser	Ile	Thr	Asp	290	295	300	
Ile	Ile	Gln	Ile	Asn	Gly	Ile	Pro	Thr	Val	Val	Gly	Val	Phe	Thr	Thr	305	310	315	320
Gln	Leu	Asn	Ser	Ile	Pro	Gly	Ser	Ala	Val	Cys	Ala	Phe	Ser	Met	Asp	325	330	335	
Asp	Ile	Glu	Lys	Val	Phe	Lys	Gly	Arg	Phe	Lys	Glu	Gln	Lys	Thr	Pro	340	345	350	
Asp	Ser	Val	Trp	Thr	Ala	Val	Pro	Glu	Asp	Lys	Val	Pro	Lys	Pro	Arg	355	360	365	
Pro	Gly	Cys	Cys	Ala	Lys	His	Gly	Leu	Ala	Glu	Ala	Tyr	Lys	Thr	Ser	370	375	380	
Ile	Asp	Phe	Pro	Asp	Glu	Thr	Leu	Ser	Phe	Ile	Lys	Ser	His	Pro	Leu	385	390	395	400
Met	Asp	Ser	Ala	Val	Pro	Pro	Ile	Ala	Asp	Glu	Pro	Trp	Phe	Thr	Lys	405	410	415	
Thr	Arg	Val	Arg	Tyr	Arg	Leu	Thr	Ala	Ile	Ser	Val	Asp	His	Ser	Ala	420	425	430	
Gly	Pro	Tyr	Gln	Asn	Tyr	Thr	Val	Ile	Phe	Val	Gly	Ser	Glu	Ala	Gly	435	440	445	

Met	Val	Leu	Lys	Val	Leu	Ala	Lys	Thr	Ser	Pro	Phe	Ser	Leu	Asn	Asp	
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Ser	Val	Leu	Leu	Glu	Glu	Ile	Glu	Ala	Tyr	Asn	His	Ala	Lys	Cys	Ser	
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Ala	Glu	Asn	Glu	Glu	Asp	Lys	Lys	Val	Ile	Ser	Leu	Gln	Leu	Asp	Lys	
			485						490					495		
Asp	His	His	Ala	Leu	Tyr	Val	Ala	Phe	Ser	Ser	Cys	Ile	Ile	Arg	Ile	
			500					505					510			
Pro	Leu	Ser	Arg	Cys	Glu	Arg	Tyr	Gly	Ser	Cys	Lys	Lys	Ser	Cys	Ile	
	515						520					525				
Ala	Ser	Arg	Asp	Pro	Tyr	Cys	Gly	Trp	Leu	Ser	Gln	Gly	Ser	Cys	Gly	
	530					535					540					
Arg	Val	Thr	Pro	Gly	Met	Leu	Leu	Leu	Thr	Glu	Asp	Phe	Phe	Ala	Phe	
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His	Asn	His	Ser	Ala	Glu	Gly	Tyr	Glu	Gln	Asp	Thr	Glu	Phe	Gly	Asn	
				565					570					575		
Thr	Ala	His	Leu	Gly	Asp	Cys	His	Glu	Ile	Leu	Pro	Thr	Ser	Thr	Thr	
			580					585					590			
Pro	Asp	Tyr	Lys	Ile	Phe	Gly	Gly	Pro	Thr	Ser	Asp	Met	Glu	Val	Ser	
	595						600					605				
Ser	Ser	Ser	Val	Thr	Thr	Met	Ala	Ser	Ile	Pro	Glu	Ile	Thr	Pro	Lys	
	610					615					620					
Val	Ile	Asp	Thr	Trp	Arg	Pro	Lys	Leu	Thr	Ser	Ser	Arg	Lys	Phe	Val	
625					630					635					640	
Val	Gln	Asp	Asp	Pro	Asn	Thr	Ser	Asp	Phe	Thr	Asp	Pro	Leu	Ser	Gly	
				645					650					655		
Ile	Pro	Lys	Gly	Val	Arg	Trp	Glu	Val	Gln	Ser	Gly	Glu	Ser	Asn	Gln	
			660					665					670			
Met	Val	His	Met	Asn	Val	Leu	Ile	Thr	Cys	Val	Phe	Ala	Ala	Phe	Val	
			675				680					685				
Leu	Gly	Ala	Phe	Ile	Ala	Gly	Val	Ala	Val	Tyr	Cys	Tyr	Arg	Asp	Met	
	690					695					700					
Phe	Val	Arg	Lys	Asn	Arg	Lys	Ile	His	Lys	Asp	Ala	Glu	Ser	Ala	Gln	
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Ser	Cys	Thr	Asp	Ser	Ser	Gly	Ser	Phe	Ala	Lys	Leu	Asn	Gly	Leu	Phe	
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Asp	Ser	Pro	Val	Lys	Glu	Tyr	Gln	Gln	Asn	Ile	Asp	Ser	Pro	Lys	Leu	
			740					745					750			

Tyr Ser Asn Leu Leu Thr Ser Arg Lys Glu Leu Pro Pro Asn Gly Asp  
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 Thr Lys Ser Met Val Met Asp His Arg Gly Gln Pro Pro Glu Leu Ala  
 770 775 780  
 Ala Leu Pro Thr Pro Glu Ser Thr Pro Val Leu His Gln Lys Thr Leu  
 785 790 795 800  
 Gln Ala Met Lys Ser His Ser Glu Lys Ala His Gly His Gly Ala Ser  
 805 810 815  
 Arg Lys Glu Thr Pro Gln Phe Phe Pro Ser Ser Pro Pro Pro His Ser  
 820 825 830  
 Pro Leu Ser His Gly His Ile Pro Ser Ala Ile Val Leu Pro Asn Ala  
 835 840 845  
 Thr His Asp Tyr Asn Thr Ser Phe Ser Asn Ser Asn Ala His Lys Ala  
 850 855 860  
 Glu Lys Lys Leu Gln Asn Ile Asp His Pro Leu Thr Lys Ser Ser Ser  
 865 870 875 880  
 Lys Arg Asp His Arg Arg Ser Val Asp Ser Arg Asn Thr Leu Asn Asp  
 885 890 895  
 Leu Leu Lys His Leu Asn Asp Pro Asn Ser Asn Pro Lys Ala Ile Met  
 900 905 910  
 Gly Asp Ile Gln Met Ala His Gln Asn Leu Met Leu Asp Pro Met Gly  
 915 920 925  
 Ser Met Ser Glu Val Pro Pro Lys Val Pro Asn Arg Glu Ala Ser Leu  
 930 935 940  
 Tyr Ser Pro Pro Ser Thr Leu Pro Arg Asn Ser Pro Thr Lys Arg Val  
 945 950 955 960  
 Asp Val Pro Thr Thr Pro Gly Val Pro Met Thr Ser Leu Glu Arg Gln  
 965 970 975  
 Arg Gly Tyr His Lys Asn Ser Ser Gln Arg His Ser Ile Ser Ala Met  
 980 985 990  
 Pro Lys Asn Leu Asn Ser Pro Asn Gly Val Leu Leu Ser Arg Gln Pro  
 995 1000 1005  
 Ser Met Asn Arg Gly Gly Tyr Met Pro Thr Pro Thr Gly Ala Lys Val  
 1010 1015 1020  
 Asp Tyr Ile Gln Gly Thr Pro Val Ser Val His Leu Gln Pro Ser Leu  
 1025 1030 1035 1040  
 Ser Arg Gln Ser Ser Tyr Thr Ser Asn Gly Thr Leu Pro Arg Thr Gly  
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 <212> DNA  
 <213> Homo sapiens

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 <212> PRT  
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 Trp Ser Ser Arg Ser Leu Gly Ala Arg Cys Arg Asn Ser Ile Ala Ser  
           35                  40                  45  
 Cys Pro Glu Glu Gln Pro His Val Gly Asn Tyr Arg Leu Leu Arg Thr  
       50                  55                  60  
 Ile Gly Lys Gly Asn Phe Ala Lys Val Lys Leu Ala Arg His Ile Leu  
   65                  70                  75                  80  
 Thr Gly Arg Glu Val Ala Ile Lys Ile Ile Asp Lys Thr Gln Leu Asn  
                   85                  90                  95  
 Pro Ser Ser Leu Gln Lys Leu Phe Arg Glu Val Arg Ile Met Lys Gly  
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 Leu Asn His Pro Asn Ile Val Lys Leu Phe Glu Val Ile Glu Thr Glu  
           115                  120                  125  
 Lys Thr Leu Tyr Leu Val Met Glu Tyr Ala Ser Ala Gly Glu Pro Pro  
       130                  135                  140  
 Thr Leu Ser Ala Leu Pro Leu Cys His Leu Pro Leu Pro Leu His Leu  
   145                  150                  155                  160  
 Thr Leu Thr Pro Leu Gly Leu Cys Pro Ala Gly Glu Val Phe Asp Tyr  
           165                  170                  175  
 Leu Val Ser His Gly Arg Met Lys Glu Lys Glu Ala Arg Ala Lys Phe  
           180                  185                  190  
 Arg Gln Ile Val Ser Ala Val His Tyr Cys His Gln Lys Asn Ile Val  
       195                  200                  205  
 His Arg Asp Leu Lys Ala Glu Asn Leu Leu Leu Asp Ala Glu Ala Asn  
       210                  215                  220  
 Ile Lys Ile Ala Asp Phe Gly Phe Ser Asn Glu Phe Thr Leu Gly Ser  
   225                  230                  235                  240  
 Lys Leu Asp Thr Phe Cys Gly Ser Pro Pro Tyr Ala Ala Pro Glu Leu  
           245                  250                  255  
 Phe Gln Gly Lys Lys Tyr Asp Gly Pro Glu Val Asp Ile Trp Ser Leu  
           260                  265                  270

Gly Val Ile Leu Tyr Thr Leu Val Ser Gly Ser Leu Pro Phe Asp Gly  
 275 280 285  
 His Asn Leu Lys Glu Leu Arg Glu Arg Val Leu Arg Gly Lys Tyr Arg  
 290 295 300  
 Val Pro Phe Tyr Met Ser Thr Asp Cys Glu Ser Ile Leu Arg Arg Phe  
 305 310 315 320  
 Leu Val Leu Asn Pro Ala Lys Arg Cys Thr Leu Glu Gln Ile Met Lys  
 325 330 335  
 Asp Lys Trp Ile Asn Ile Gly Tyr Glu Gly Glu Glu Leu Lys Pro Tyr  
 340 345 350  
 Thr Glu Pro Glu Glu Asp Phe Gly Asp Thr Lys Arg Ile Glu Val Met  
 355 360 365  
 Val Gly Met Gly Tyr Thr Arg Glu Glu Ile Lys Glu Ser Leu Thr Ser  
 370 375 380  
 Gln Lys Tyr Asn Glu Val Thr Ala Thr Tyr Leu Leu Leu Gly Arg Lys  
 385 390 395 400  
 Leu Ser Pro Thr Ser Thr Gly Glu Ala Glu Leu Lys Glu Glu Arg Leu  
 405 410 415  
 Pro Gly Arg Lys Ala Ser Cys Ser Thr Ala Gly Ser Gly Ser Arg Gly  
 420 425 430  
 Leu Pro Pro Ser Ser Pro Met Val Ser Ser Ala His Asn Pro Asn Lys  
 435 440 445  
 Ala Glu Ile Pro Glu Arg Arg Lys Asp Ser Thr Pro Val Ser Asp Gln  
 450 455 460  
 Gly Trp Gly Met Met Thr Arg Arg Asn Thr Tyr Val Cys Thr Glu Arg  
 465 470 475 480  
 Pro Gly Ala Glu Arg Pro Ser Leu Leu Pro Asn Gly Lys Glu Asn Arg  
 485 490 495  
 Val Pro Pro Ala Ser Pro Ser Ser His Ser Leu Ala Pro Pro Ser Gly  
 500 505 510  
 Glu Arg Ser Arg Leu Ala Arg Gly Ser Thr Ile Arg Ser Thr Phe His  
 515 520 525  
 Gly Gly Gln Val Arg Asp Arg Arg Ala Gly Gly Gly Gly Gly Gly  
 530 535 540  
 Val Gln Asn Gly Pro Pro Ala Ser Pro Thr Leu Ala His Glu Ala Ala  
 545 550 555 560  
 Pro Leu Pro Ala Gly Arg Pro Arg Pro Thr Thr Asn Leu Phe Thr Lys  
 565 570 575



Leu Thr Ser Lys Leu Thr Arg Ser Arg Leu Ser Cys His Leu Pro Trp  
 580 585 590  
 Asp Gln Thr Glu Thr Ala Pro Arg Leu Leu Arg Phe Pro Trp Ser Val  
 595 600 605  
 Lys Leu Thr Ser Ser Arg Pro Pro Glu Ala Leu Met Ala Ala Leu Arg  
 610 615 620  
 Gln Ala Thr Ala Ala Ala Arg Cys Arg Cys Arg Gln Pro Gln Pro Phe  
 625 630 635 640  
 Leu Leu Ala Cys Leu His Gly Gly Ala Gly Gly Pro Glu Pro Leu Ser  
 645 650 655  
 His Phe Glu Val Glu Val Cys Gln Leu Pro Arg Pro Gly Leu Arg Gly  
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 Val Leu Phe Arg Arg Val Ala Gly Thr Ala Leu Ala Phe Arg Thr Leu  
 675 680 685  
 Val Thr Arg Ile Ser Asn Asp Leu Glu Leu  
 690 695

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1549

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<211> 508

<212> PRT

<213> Homo sapiens

<400> 24

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Trp Ser Ser Arg Ser Leu Gly Ala Arg Cys Arg Asn Ser Ile Ala Ser  
35 40 45

Cys Pro Glu Glu Gln Pro His Val Gly Asn Tyr Arg Leu Leu Arg Thr  
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Ile Gly Lys Gly Asn Phe Ala Lys Val Lys Leu Ala Arg His Ile Leu  
65 70 75 80

Thr Gly Arg Glu Val Ala Ile Lys Ile Ile Asp Lys Thr Gln Leu Asn  
85 90 95

Pro Ser Ser Leu Gln Lys Leu Phe Arg Glu Val Arg Ile Met Lys Gly  
100 105 110

Leu Asn His Pro Asn Ile Val Lys Leu Phe Glu Val Ile Glu Thr Glu  
115 120 125

Lys Thr Leu Tyr Leu Val Met Glu Tyr Ala Ser Ala Gly Glu Val Phe  
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Asp Tyr Leu Val Ser His Gly Arg Met Lys Glu Lys Glu Ala Arg Ala  
145 150 155 160

Lys Phe Arg Gln Ile Val Ser Ala Val His Tyr Cys His Gln Lys Asn  
165 170 175

Ile Val His Arg Asp Leu Lys Ala Glu Asn Leu Leu Leu Asp Ala Glu  
180 185 190

Ala Asn Ile Lys Ile Ala Asp Phe Gly Phe Ser Asn Glu Phe Thr Leu  
195 200 205

Gly Ser Lys Leu Asp Thr Phe Cys Gly Ser Pro Pro Tyr Ala Ala Pro  
210 215 220

Glu Leu Phe Gln Gly Lys Lys Tyr Asp Gly Pro Glu Val Asp Ile Trp  
225 230 235 240

Ser Leu Gly Val Ile Leu Tyr Thr Leu Val Ser Gly Ser Leu Pro Phe  
245 250 255

Asp Gly His Asn Leu Lys Glu Leu Arg Glu Arg Val Leu Arg Gly Lys  
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 Tyr Arg Val Pro Phe Tyr Met Ser Thr Asp Cys Glu Ser Ile Leu Arg  
 275 280 285  
 Arg Phe Leu Val Leu Asn Pro Ala Lys Arg Cys Thr Leu Glu Gln Ile  
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 Pro Tyr Thr Glu Pro Glu Glu Asp Phe Gly Asp Thr Lys Arg Ile Glu  
 325 330 335  
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 Asp Glu Pro Glu Arg Ile Gly Gly Pro Glu Val Thr Ser Cys His Leu  
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 Pro Trp Asp Gln Thr Glu Thr Ala Pro Arg Leu Leu Arg Phe Pro Trp  
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 Ser Val Lys Leu Thr Ser Ser Arg Pro Pro Glu Ala Leu Met Ala Ala  
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 Pro Phe Leu Leu Ala Cys Leu His Gly Gly Ala Gly Gly Pro Glu Pro  
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 <211> 4818  
 <212> DNA  
 <213> Homo sapiens

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<210> 26  
 <211> 1469  
 <212> PRT  
 <213> Homo sapiens

<400> 26  
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 35 40 45  
 Val Cys Val Lys Pro Asp Arg Cys Leu Cys Pro Pro Asp Phe Ala Gly  
 50 55 60  
 Lys Phe Cys Gln Leu His Ser Ser Gly Ala Arg Pro Pro Ala Pro Ala  
 65 70 75 80  
 Ile Pro Gly Leu Thr Arg Ser Val Tyr Thr Met Pro Leu Ala Asn His  
 85 90 95  
 Arg Asp Asp Glu His Gly Val Ala Ser Met Val Ser Val His Val Glu  
 100 105 110  
 His Pro Gln Glu Ala Ser Val Val Val His Gln Val Glu Arg Val Ser  
 115 120 125  
 Gly Pro Trp Glu Glu Ala Asp Ala Glu Ala Val Ala Arg Ala Glu Ala  
 130 135 140

Ala Ala Arg Ala Glu Ala Ala Ala Pro Tyr Thr Val Leu Ala Gln Ser  
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 Ala Pro Arg Glu Asp Gly Tyr Ser Asp Ala Ser Gly Phe Gly Tyr Cys  
 165 170 175  
 Phe Arg Glu Leu Arg Gly Gly Glu Cys Ala Ser Pro Leu Pro Gly Leu  
 180 185 190  
 Arg Thr Gln Glu Val Cys Cys Arg Gly Ala Gly Leu Ala Trp Gly Val  
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 His Asp Cys Gln Leu Cys Ser Glu Arg Leu Gly Asn Ser Glu Arg Val  
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 225 230 235 240  
 Ser Cys Glu Asp Val Asp Glu Cys Ala Thr Gly Gly Arg Cys Gln His  
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 Gly Glu Cys Ala Asn Thr Arg Gly Gly Tyr Thr Cys Val Cys Pro Asp  
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 275 280 285  
 Ile Ser Glu Ala Lys Gly Pro Cys Phe Arg Val Leu Arg Asp Gly Gly  
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 Ser Arg Val Gly Lys Ala Trp Gly Arg Gly Cys Gln Leu Cys Pro Pro  
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 Phe Gly Ser Glu Gly Phe Arg Glu Ile Cys Pro Ala Gly Pro Gly Tyr  
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 His Tyr Ser Ala Ser Asp Leu Arg Tyr Asn Thr Arg Pro Leu Gly Gln  
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 Glu Pro Pro Arg Val Ser Leu Ser Gln Pro Arg Thr Leu Pro Ala Thr  
 370 375 380  
 Ser Arg Pro Ser Ala Gly Phe Leu Pro Thr His Arg Leu Glu Pro Arg  
 385 390 395 400  
 Pro Glu Pro Arg Pro Asp Pro Arg Pro Gly Pro Glu Phe Pro Leu Pro  
 405 410 415  
 Ser Ile Pro Ala Trp Thr Gly Pro Glu Ile Pro Glu Ser Gly Pro Ser  
 420 425 430  
 Ser Gly Met Cys Gln Arg Asn Pro Gln Val Cys Gly Pro Gly Arg Cys  
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Ile Ser Arg Pro Ser Gly Tyr Thr Cys Ala Cys Asp Ser Gly Phe Arg  
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 Ala Gly Tyr Gln Ala Ala Pro His Gly Ala Ser Cys Gln Asp Val Asp  
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 Glu Cys Thr Gln Ser Pro Gly Leu Cys Gly Arg Gly Ala Cys Lys Asn  
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 580 585 590  
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Tyr Arg Ala Pro Ser Gly Arg Pro Gly Pro Cys Ala Asp Val Asn Glu  
755 760 765  
Cys Leu Glu Gly Asp Phe Cys Phe Pro His Gly Glu Cys Leu Asn Thr  
770 775 780  
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785 790 795 800  
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Val Asp Glu Cys Arg Glu Arg Gly Pro Ala Leu Cys Gly Ser Gln Arg  
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Cys Glu Asn Ser Pro Gly Ser Tyr Arg Cys Val Arg Asp Cys Asp Pro  
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Gly Tyr His Ala Gly Pro Glu Gly Thr Cys Asp Asp Val Asp Glu Cys  
885 890 895  
Gln Glu Tyr Gly Pro Glu Ile Cys Gly Ala Gln Arg Cys Glu Asn Thr  
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945 950 955 960  
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1045 1050 1055



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 Phe Arg Asp Gln Val Cys Lys Ser Gly Val Cys Val Asn Thr Ala Pro  
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 1155 1160 1165  
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Cys Val Arg Val Pro Glu Gly Phe Thr Cys Arg Cys Phe Asp Gly Tyr  
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Glu Ala Glu Ala Ala Ser Pro Leu Cys Val Asn Ala Arg Cys Leu Asn  
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Val Cys Val Lys Pro Asp Arg Cys Leu Cys Pro Pro Asp Phe Ala Gly
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Ile Pro Gly Leu Thr Arg Ser Val Tyr Thr Met Pro Leu Ala Asn His
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Val Cys Val Lys Pro Asp Arg Cys Leu Cys Pro Pro Asp Phe Ala Gly
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Lys Phe Cys Gln Leu His Ser Ser Gly Ala Arg Pro Pro Ala Pro Ala
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Ile Pro Gly Leu Thr Arg Ser Val Tyr Thr Met Pro Leu Ala Asn His
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Gly Pro Trp Glu Glu Ala Asp Ala Glu Ala Val Ala Arg Ala Glu Ala
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<212> DNA  
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 Lys Phe Cys Gln Leu His Ser Ser Gly Ala Arg Pro Pro Ala Pro Ala  
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 Ile Pro Gly Leu Thr Arg Ser Val Tyr Thr Met Pro Leu Ala Asn His  
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 His Pro Gln Glu Ala Ser Val Val Val His Gln Val Glu Arg Val Ser  
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 Gly Pro Trp Glu Glu Ala Asp Ala Glu Ala Val Ala Arg Ala Glu Ala  
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 Arg Thr Gln Glu Val Cys Cys Arg Gly Ala Gly Leu Ala Trp Gly Val  
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 Ala Ala Ser Pro Leu Cys Val Asn Ala Arg Cys Leu Asn Thr Asp Gly  
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 Ser Phe Arg Cys Ile Cys Arg Pro Gly Phe Ala Pro Thr His Gln Pro  
 1330 1335 1340  
 His His Cys Ala Pro Ala Arg Pro Arg Ala  
 1345 1350

<210> 33  
 <211> 973  
 <212> DNA  
 <213> Homo sapiens

<400> 33  
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 gcgggatggc aggcaacagc atgggtgatct ggctgctagg ctttcgaatg cacaggaacc 180  
 ccttctgcat ctatatcctc aacctggcgg cagccgacct cctcttcctc ttcagcatgg 240  
 cttccacgct cagcctggaa acccagcccc tgggtcaatac cactgacaag gtccacgagc 300  
 tgatgaagag actgatgtac tttgcctaca cagtgggcct gagcctgctg acggccatca 360  
 gcacccagcg ctgtctctct gtectcttcc ctatctggtt caagtgtcac cggcccaggc 420  
 acctgtcagc ctgggtgtgt ggcctgctgt ggacgctctg tctcctgatg aacgggttga 480  
 cctcttcctt ctgcagcaag ttcttgaaat tcaatgaaga tcggtgcttc aggggtggaca 540  
 tgggtccaggc cgccctcatc atgggggtct taacccagc gatgactctg tccagcctga 600  
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 tcgtggtggt cctggcctct gtcctggtgt tcctcatctg ttccctgcct ctgagcatct 720  
 actggtttgt gctctactgg ttgagcccg cgcgcgagat gcaggtcctg tgcttcagct 780  
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 gcagccggag gagccacagg ctgcccacca ggctccctggg gactgtgctc caacaggcgc 900  
 ttcgcgagga gcccgagctg gaaggtgggg agacgcccac cgtgggcacc aatgagatgg 960  
 gggcttgaga gcc 973

<210> 34  
 <211> 321  
 <212> PRT  
 <213> Homo sapiens

<400> 34  
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 Tyr Ser Arg Gly Ser Thr Val His Thr Ala Tyr Leu Val Leu Ser Ser  
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 Leu Ala Met Phe Thr Cys Leu Cys Gly Met Ala Gly Asn Ser Met Val  
 35 40 45  
 Ile Trp Leu Leu Gly Phe Arg Met His Arg Asn Pro Phe Cys Ile Tyr  
 50 55 60  
 Ile Leu Asn Leu Ala Ala Ala Asp Leu Leu Phe Leu Phe Ser Met Ala  
 65 70 75 80  
 Ser Thr Leu Ser Leu Glu Thr Gln Pro Leu Val Asn Thr Thr Asp Lys  
 85 90 95  
 Val His Glu Leu Met Lys Arg Leu Met Tyr Phe Ala Tyr Thr Val Gly  
 100 105 110  
 Leu Ser Leu Leu Thr Ala Ile Ser Thr Gln Arg Cys Leu Ser Val Leu  
 115 120 125  
 Phe Pro Ile Trp Phe Lys Cys His Arg Pro Arg His Leu Ser Ala Trp

130                      135                      140  
 Val Cys Gly Leu Leu Trp Thr Leu Cys Leu Leu Met Asn Gly Leu Thr  
 145                      150                      155                      160  
 Ser Ser Phe Cys Ser Lys Phe Leu Lys Phe Asn Glu Asp Arg Cys Phe  
                     165                      170                      175  
 Arg Val Asp Met Val Gln Ala Ala Leu Ile Met Gly Val Leu Thr Pro  
                     180                      185                      190  
 Val Met Thr Leu Ser Ser Leu Thr Leu Phe Val Trp Val Arg Arg Ser  
                     195                      200                      205  
 Ser Gln Gln Trp Arg Arg Gln Pro Thr Arg Leu Phe Val Val Val Leu  
                     210                      215                      220  
 Ala Ser Val Leu Val Phe Leu Ile Cys Ser Leu Pro Leu Ser Ile Tyr  
 225                      230                      235                      240  
 Trp Phe Val Leu Tyr Trp Leu Ser Pro Pro Pro Glu Met Gln Val Leu  
                     245                      250                      255  
 Cys Phe Ser Leu Ser Arg Leu Ser Ser Ser Val Ser Ser Ser Ala Asn  
                     260                      265                      270  
 Pro Val Ile Tyr Phe Leu Val Gly Ser Arg Arg Ser His Arg Leu Pro  
                     275                      280                      285  
 Thr Arg Ser Leu Gly Thr Val Leu Gln Gln Ala Leu Arg Glu Glu Pro  
                     290                      295                      300  
 Glu Leu Glu Gly Gly Glu Thr Pro Thr Val Gly Thr Asn Glu Met Gly  
 305                      310                      315                      320

Ala

<210> 35  
 <211> 671  
 <212> DNA  
 <213> Homo sapiens

<400> 35  
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 tctgggaaaa tgaggtgaat gatgaagcag tgatgtcaac tttagaacac ttgcatgtgg 120  
 actaccctca gaatgacgtt cccgttcctg caaggtactg caaccacatg atcatacaaa 180  
 gagttatcag ggaacctgac cacacttgta aaaaggagca tgtcttcacg catgagaggc 240  
 ctcgaaaaat caatgggtatt tgcattttctc ccaagaagggt tgcttgccaa aacctttcgg 300  
 ccattttctg ctttcagagt gagacaaagt tcaaaatgac agtctgtcag ctcatgaag 360  
 gcacaagata cctgcctgc aggtaccact attccccac agagggggtt gttcttgtca 420  
 cttgtgatga cttgaggcca gatagtttcc ttggctatgt taaataactc aagatcagct 480  
 cccgagtcctg agatctcttc tctcaatggc attggagctg gctgtgcctg aggcagacct 540  
 ggaccgtgga catggggcaa tgccttgaac ggaaggggaa gccactggta attaatat 600  
 ccttcctgta ttgctgggtt gggattgttt tattctgctt caataaaata atctttactg 660  
 aattaaaaaa a 671

<210> 36  
 <211> 154  
 <212> PRT  
 <213> Homo sapiens

<400> 36  
 Ala Lys Ser Leu Leu Pro Leu Met Ile Ile Met Val Ile Ile Phe Leu  
           1                  5                  10                  15  
 Val Leu Leu Phe Trp Glu Asn Glu Val Asn Asp Glu Ala Val Met Ser  
                   20                  25                  30  
 Thr Leu Glu His Leu His Val Asp Tyr Pro Gln Asn Asp Val Pro Val  
           35                  40                  45  
 Pro Ala Arg Tyr Cys Asn His Met Ile Ile Gln Arg Val Ile Arg Glu  
           50                  55                  60  
 Pro Asp His Thr Cys Lys Lys Glu His Val Phe Ile His Glu Arg Pro  
           65                  70                  75                  80  
 Arg Lys Ile Asn Gly Ile Cys Ile Ser Pro Lys Lys Val Ala Cys Gln  
                   85                  90                  95  
 Asn Leu Ser Ala Ile Phe Cys Phe Gln Ser Glu Thr Lys Phe Lys Met  
                   100                  105                  110  
 Thr Val Cys Gln Leu Ile Glu Gly Thr Arg Tyr Pro Ala Cys Arg Tyr  
           115                  120                  125  
 His Tyr Ser Pro Thr Glu Gly Phe Val Leu Val Thr Cys Asp Asp Leu  
           130                  135                  140  
 Arg Pro Asp Ser Phe Leu Gly Tyr Val Lys  
           145                  150

<210> 37  
 <211> 1476  
 <212> DNA  
 <213> Homo sapiens

<400> 37  
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 caaggctccc ttgtgggtct ggaaatctgc attggtaaatt gctttaggct tttttacttc 120  
 ttcatgcaaa gttttctttg catcggatcc catcaaaata gtgagagccc agaggcagta 180  
 catgtttgat gagaacgggtg aacagtactt ggactgcatc aacaatggtg ccgtgggaca 240  
 ctgtcaccga ggagtgggtca aagctgccct gaaacagatg gaactgctaa atacaaattc 300  
 tcgattcctc cacgacaaca ttgttgagta tgccaaacgc ctttcagcaa ctctgccgga 360  
 gaaactctct gtttggttatt ttacaaattc aggggtccgaa gccaacgact tagccttacg 420  
 cctggctcgg cagttcagag gccaccagga tgtgatcact cttgacgctt accatgggtca 480  
 cctatcatcc ttaattgaga ttagcccata taagtttcag aaaggaaaag atgtcaaaaa 540  
 agaatttgta catgtggcac caactccaga tacttacaga ggaaaatata gagaagacca 600  
 tgcagactca gccagtgtt atgcagatga agtgaagaaa atcattgaag atgctcataa 660  
 cagtgggaagg aaggttgctg cctttattgc tgaatccatg cagagttgtg gcggacaaat 720

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aattcctcca gcaggctact tccagaaagt ggcagagtat gtacacggtg caggggggtgt 780
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ccagatgtat ggtgaagact ttgttccaga catcgtcaca atgggaaaac cgatgggcaa 900
cggccacccg gtggcatgtg tggtacaac caaagaaatt gcagaagcct tcagcagctc 960
tgggatggaa tattttaata cgtatggagg aaatccagta tcttgtgctg ttggtttggc 1020
tgtcctggat ataattgaaa atgaagacct tcaaggaaat gccaagagag tagggaatta 1080
tctcactgag ttactgaaaa aacagaaggc taaacacact ttgataggag atattagggg 1140
cattggcctt tttattggaa ttgatttagt gaaggacct ctgaaaagga cccctgatat 1200
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agatgtcttc ttgttccctc tcccaaacc acccctcaaa ccctgggtcta gtcataatga 1440
gcatatgcat cttgttattc atgatggaag tgaggc 1476

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<210> 38  
 <211> 451  
 <212> PRT  
 <213> Homo sapiens

<400> 38

Met	Ala	Ser	Arg	Arg	Ser	Lys	Phe	Lys	Gly	Ser	Thr	Lys	Ala	Pro	Leu
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Trp	Val	Trp	Lys	Ser	Ala	Leu	Val	Asn	Ala	Leu	Gly	Phe	Phe	Thr	Ser
			20					25						30	
Ser	Cys	Lys	Val	Phe	Phe	Ala	Ser	Asp	Pro	Ile	Lys	Ile	Val	Arg	Ala
		35					40					45			
Gln	Arg	Gln	Tyr	Met	Phe	Asp	Glu	Asn	Gly	Glu	Gln	Tyr	Leu	Asp	Cys
		50				55					60				
Ile	Asn	Asn	Val	Ala	Val	Gly	His	Cys	His	Pro	Gly	Val	Val	Lys	Ala
65					70					75					80
Ala	Leu	Lys	Gln	Met	Glu	Leu	Leu	Asn	Thr	Asn	Ser	Arg	Phe	Leu	His
				85					90					95	
Asp	Asn	Ile	Val	Glu	Tyr	Ala	Lys	Arg	Leu	Ser	Ala	Thr	Leu	Pro	Glu
			100					105					110		
Lys	Leu	Ser	Val	Cys	Tyr	Phe	Thr	Asn	Ser	Gly	Ser	Glu	Ala	Asn	Asp
			115				120					125			
Leu	Ala	Leu	Arg	Leu	Ala	Arg	Gln	Phe	Arg	Gly	His	Gln	Asp	Val	Ile
					135						140				
Thr	Leu	Asp	Ala	Tyr	His	Gly	His	Leu	Ser	Ser	Leu	Ile	Glu	Ile	Ser
145					150					155					160
Pro	Tyr	Lys	Phe	Gln	Lys	Gly	Lys	Asp	Val	Lys	Lys	Glu	Phe	Val	His
				165					170					175	
Val	Ala	Pro	Thr	Pro	Asp	Thr	Tyr	Arg	Gly	Lys	Tyr	Arg	Glu	Asp	His
				180				185					190		



Ala Asp Ser Ala Ser Ala Tyr Ala Asp Glu Val Lys Lys Ile Ile Glu  
 195 200 205  
 Asp Ala His Asn Ser Gly Arg Lys Val Ala Ala Phe Ile Ala Glu Ser  
 210 215 220  
 Met Gln Ser Cys Gly Gly Gln Ile Ile Pro Pro Ala Gly Tyr Phe Gln  
 225 230 235 240  
 Lys Val Ala Glu Tyr Val His Gly Ala Gly Gly Val Phe Ile Ala Asp  
 245 250 255  
 Glu Val Gln Val Gly Phe Gly Arg Val Gly Lys His Phe Trp Ser Phe  
 260 265 270  
 Gln Met Tyr Gly Glu Asp Phe Val Pro Asp Ile Val Thr Met Gly Lys  
 275 280 285  
 Pro Met Gly Asn Gly His Pro Val Ala Cys Val Val Thr Thr Lys Glu  
 290 295 300  
 Ile Ala Glu Ala Phe Ser Ser Ser Gly Met Glu Tyr Phe Asn Thr Tyr  
 305 310 315 320  
 Gly Gly Asn Pro Val Ser Cys Ala Val Gly Leu Ala Val Leu Asp Ile  
 325 330 335  
 Ile Glu Asn Glu Asp Leu Gln Gly Asn Ala Lys Arg Val Gly Asn Tyr  
 340 345 350  
 Leu Thr Glu Leu Leu Lys Lys Gln Lys Ala Lys His Thr Leu Ile Gly  
 355 360 365  
 Asp Ile Arg Gly Ile Gly Leu Phe Ile Gly Ile Asp Leu Val Lys Asp  
 370 375 380  
 His Leu Lys Arg Thr Pro Asp Met Tyr Leu Ala Leu Gly Thr Ile Leu  
 385 390 395 400  
 Val Leu Glu Lys Glu Lys Arg Val Leu Leu Ser Ala Asp Gly Pro His  
 405 410 415  
 Arg Asn Val Leu Lys Ile Lys Pro Pro Met Cys Phe Thr Glu Glu Asp  
 420 425 430  
 Ala Lys Phe Met Val Asp Gln Leu Asp Arg Ile Leu Thr Gly Gly Ser  
 435 440 445  
 Met Asp Leu  
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<210> 39  
 <211> 3350  
 <212> DNA  
 <213> Homo sapiens

<400> 39

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gcctcgcggc	gccgggggac	tcggggagcg	cccgggacgc	accgcagact	actcagagct	480
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cctgatgatt	cgattccgca	cagatgacac	catcaacaag	aaaggctttc	atgcccagata	3300
caccagcacc	aagttccagg	atggcctgca	catgaagaaa	tagtgctgat		3350

<210> 40  
 <211> 992  
 <212> PRT  
 <213> Homo sapiens

<400> 40  
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 Thr Ala Asp Tyr Ser Glu Leu Asp Gly Glu Glu Gly Thr Glu Gln Gln  
           35                  40                  45  
 Leu Glu His Tyr His Asp Pro Cys Lys Ala Ala Val Phe Trp Gly Asp  
   50                  55                  60  
 Ile Ala Leu Asp Glu Asp Asp Leu Lys Leu Phe His Ile Asp Lys Ala  
   65                  70                  75                  80  
 Arg Asp Trp Thr Lys Gln Thr Val Gly Ala Thr Gly His Ser Thr Gly  
                   85                  90                  95  
 Gly Leu Glu Glu Gln Ala Ser Glu Ser Ser Pro Asp Thr Thr Ala Met  
           100                  105                  110  
 Asp Thr Gly Thr Lys Glu Ala Gly Lys Asp Gly Arg Glu Asn Thr Thr  
           115                  120                  125  
 Leu Leu His Ser Pro Gly Thr Leu His Ala Ala Ala Lys Thr Phe Ser  
   130                  135                  140  
 Pro Arg Val Arg Arg Ala Thr Thr Ser Arg Thr Glu Arg Ile Trp Pro  
  145                  150                  155                  160  
 Gly Gly Val Ile Pro Tyr Val Ile Gly Gly Asn Phe Thr Gly Ser Gln  
                   165                  170                  175  
 Arg Ala Ile Phe Lys Gln Ala Met Arg His Trp Glu Lys His Thr Cys  
           180                  185                  190  
 Val Thr Phe Ile Glu Arg Thr Asp Glu Glu Ser Phe Ile Val Phe Ser  
   195                  200                  205  
 Tyr Arg Thr Cys Gly Cys Cys Ser Tyr Val Gly Arg Arg Gly Gly Gly  
   210                  215                  220  
 Pro Gln Ala Ile Ser Ile Gly Lys Asn Cys Asp Lys Phe Gly Ile Val  
  225                  230                  235                  240  
 Ala His Glu Leu Gly His Val Val Gly Phe Trp His Glu His Thr Arg  
           245                  250                  255  
 Pro Asp Arg Asp Gln His Val Thr Ile Ile Arg Glu Asn Ile Gln Pro

260					265					270					
Gly	Gln	Glu	Tyr	Asn	Phe	Leu	Lys	Met	Glu	Ala	Gly	Glu	Val	Ser	Ser
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Leu	Gly	Glu	Thr	Tyr	Asp	Phe	Asp	Ser	Ile	Met	His	Tyr	Ala	Arg	Asn
	290					295					300				
Thr	Phe	Ser	Arg	Gly	Val	Phe	Leu	Asp	Thr	Ile	Leu	Pro	Arg	Gln	Asp
305					310					315					320
Asp	Asn	Gly	Val	Arg	Pro	Thr	Ile	Gly	Gln	Arg	Val	Arg	Leu	Ser	Gln
				325					330					335	
Gly	Asp	Ile	Ala	Gln	Ala	Arg	Lys	Leu	Tyr	Lys	Cys	Pro	Ala	Cys	Gly
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Glu	Thr	Leu	Gln	Asp	Thr	Thr	Gly	Asn	Phe	Ser	Ala	Pro	Gly	Phe	Pro
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Asn	Gly	Tyr	Pro	Ser	Tyr	Ser	His	Cys	Val	Trp	Arg	Ile	Ser	Val	Thr
	370					375					380				
Pro	Gly	Glu	Lys	Ile	Val	Leu	Asn	Phe	Thr	Ser	Met	Asp	Leu	Phe	Lys
385					390					395					400
Ser	Arg	Leu	Cys	Trp	Tyr	Asp	Tyr	Val	Glu	Val	Arg	Asp	Gly	Tyr	Trp
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Arg	Lys	Ala	Pro	Leu	Leu	Gly	Arg	Phe	Cys	Gly	Asp	Lys	Ile	Pro	Glu
			420					425					430		
Pro	Leu	Val	Ser	Thr	Asp	Ser	Arg	Leu	Trp	Val	Glu	Phe	Arg	Ser	Ser
		435					440					445			
Ser	Asn	Ile	Leu	Gly	Lys	Gly	Phe	Phe	Ala	Ala	Tyr	Glu	Ala	Thr	Cys
	450					455					460				
Gly	Gly	Asp	Met	Asn	Lys	Asp	Ala	Gly	Gln	Ile	Gln	Ser	Pro	Asn	Tyr
465					470					475					480
Pro	Asp	Asp	Tyr	Arg	Pro	Ser	Lys	Glu	Cys	Val	Trp	Arg	Ile	Thr	Val
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Ser	Glu	Gly	Phe	His	Val	Gly	Leu	Thr	Phe	Gln	Ala	Phe	Glu	Ile	Glu
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Glu	Asp	Val	Lys	Ser	Ser	Ser	Asn	Arg	Leu	Trp	Met	Lys	Phe	Val	Ser
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Asp	Gly	Ser	Ile	Asn	Lys	Ala	Gly	Phe	Ala	Ala	Asn	Phe	Phe	Lys	Glu

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Pro	Thr	Asn	Lys	Asn	Cys	Val	Trp	Gln	Val	Val	Ala	Pro	Thr	Gln	Tyr				
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Arg	Ile	Ser	Leu	Gln	Phe	Glu	Val	Phe	Glu	Leu	Glu	Gly	Asn	Asp	Val				
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Cys	Lys	Tyr	Asp	Phe	Val	Glu	Val	Arg	Ser	Gly	Leu	Ser	Pro	Asp	Ala				
			675				680					685							
Lys	Leu	His	Gly	Arg	Phe	Cys	Gly	Ser	Glu	Thr	Pro	Glu	Val	Ile	Thr				
			690			695				700									
Ser	Gln	Ser	Asn	Asn	Met	Arg	Val	Glu	Phe	Lys	Ser	Asp	Asn	Thr	Val				
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Ser	Lys	Arg	Gly	Phe	Arg	Ala	His	Phe	Phe	Ser	Asp	Lys	Asp	Glu	Cys				
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Ala	Lys	Asp	Asn	Gly	Gly	Cys	Gln	His	Glu	Cys	Val	Asn	Thr	Phe	Gly				
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Ser	Tyr	Leu	Cys	Arg	Cys	Arg	Asn	Gly	Tyr	Trp	Leu	His	Glu	Asn	Gly				
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His	Asp	Cys	Lys	Glu	Ala	Gly	Cys	Ala	His	Lys	Ile	Ser	Ser	Val	Glu				
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Gly	Thr	Leu	Ala	Ser	Pro	Asn	Trp	Pro	Asp	Lys	Tyr	Pro	Ser	Arg	Arg				
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Glu	Cys	Thr	Trp	Asn	Ile	Ser	Ser	Thr	Ala	Gly	His	Arg	Val	Lys	Leu				
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His	Leu	Glu	Met	Tyr	Asp	Gly	Pro	Asp	Ser	Leu	Ala	Pro	Ile	Leu	Gly				
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Arg Thr Phe Glu Val Glu Glu Glu Ala Asp Cys Gly Tyr Asp Tyr Met						
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Glu Ala Tyr Asp Gly Tyr Asp Ser Ser Ala Pro Arg Leu Gly Arg Phe						
		930		935		940
Cys Gly Ser Gly Pro Leu Glu Glu Ile Tyr Ser Ala Gly Asp Ser Leu						
		945		950		955
Met Ile Arg Phe Arg Thr Asp Asp Thr Ile Asn Lys Lys Gly Phe His						
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<400> 41

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ctttcgtgca	cgcaactccc	tctgccccag	ccggccccgc	gccaccatgc	cccgggcgac	240
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cccaaatggg	tacccatctt	actcccactg	cgtctggagg	atctcgggtca	ccccagggga	1320
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 <212> PRT  
 <213> Homo sapiens

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 Thr Ala Asp Tyr Ser Glu Leu Asp Gly Glu Glu Gly Thr Glu Gln Gln  
 35 40 45  
 Leu Glu His Tyr His Asp Pro Cys Lys Ala Ala Val Phe Trp Gly Asp  
 50 55 60  
 Ile Ala Leu Asp Glu Asp Asp Leu Lys Leu Phe His Ile Asp Lys Ala  
 65 70 75 80  
 Arg Asp Trp Thr Lys Gln Thr Val Gly Ala Thr Gly His Ser Thr Gly  
 85 90 95  
 Gly Leu Glu Glu Gln Ala Ser Glu Ser Ser Pro Asp Thr Thr Ala Met  
 100 105 110

Asp Thr Gly Thr Lys Glu Ala Gly Lys Gly Ser Gln Arg Ala Ile Phe  
 115 120 125  
 Lys Gln Ala Met Arg His Trp Glu Lys His Thr Cys Val Thr Phe Ile  
 130 135 140  
 Glu Arg Thr Asp Glu Glu Ser Phe Ile Val Phe Ser Tyr Arg Thr Cys  
 145 150 155 160  
 Gly Cys Cys Ser Tyr Val Gly Arg Arg Gly Gly Gly Pro Gln Ala Ile  
 165 170 175  
 Ser Ile Gly Lys Asn Cys Asp Lys Phe Gly Ile Val Ala His Glu Leu  
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 Gly His Val Val Gly Phe Trp His Glu His Thr Arg Pro Asp Arg Asp  
 195 200 205  
 Gln His Val Thr Ile Ile Arg Glu Asn Ile Gln Pro Gly Gln Glu Tyr  
 210 215 220  
 Asn Phe Leu Lys Met Glu Ala Gly Glu Val Ser Ser Leu Gly Glu Thr  
 225 230 235 240  
 Tyr Asp Phe Asp Ser Ile Met His Tyr Ala Arg Asn Thr Phe Ser Arg  
 245 250 255  
 Gly Val Phe Leu Asp Thr Ile Leu Pro Arg Gln Asp Asp Asn Gly Val  
 260 265 270  
 Arg Pro Thr Ile Gly Gln Arg Val Arg Leu Ser Gln Gly Asp Ile Ala  
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 Gln Ala Arg Lys Leu Tyr Lys Cys Pro Gly Pro Thr Cys Ala Phe Val  
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 Ser Gln Lys Thr Ser Ile Cys Leu Leu His Phe Ser Pro Thr Cys Ser  
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 Thr Gly Asn Phe Ser Ala Pro Gly Phe Pro Asn Gly Tyr Pro Ser Tyr  
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 Ser His Cys Val Trp Arg Ile Ser Val Thr Pro Gly Glu Lys Ile Val  
 355 360 365  
 Leu Asn Phe Thr Ser Met Asp Leu Phe Lys Ser Arg Leu Cys Trp Tyr  
 370 375 380  
 Asp Tyr Val Glu Val Arg Asp Gly Tyr Trp Arg Lys Ala Pro Leu Leu  
 385 390 395 400  
 Gly Arg Phe Cys Gly Asp Lys Ile Pro Glu Pro Leu Val Ser Thr Asp  
 405 410 415



Ser Arg Leu Trp Val Glu Phe Arg Ser Ser Ser Asn Ile Leu Gly Lys  
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 Gly Phe Phe Ala Ala Tyr Glu Ala Thr Cys Gly Gly Asp Met Asn Lys  
 435 440 445  
 Asp Ala Gly Gln Ile Gln Ser Pro Asn Tyr Pro Asp Asp Tyr Arg Pro  
 450 455 460  
 Ser Lys Glu Cys Val Trp Arg Ile Thr Val Ser Glu Gly Phe His Val  
 465 470 475 480  
 Gly Leu Thr Phe Gln Ala Phe Glu Ile Glu Arg His Asp Ser Cys Ala  
 485 490 495  
 Tyr Asp Tyr Leu Glu Val Arg Asp Gly Pro Thr Glu Glu Ser Ala Leu  
 500 505 510  
 Ile Gly His Phe Cys Gly Tyr Glu Lys Pro Glu Asp Val Lys Ser Ser  
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 Ser Asn Arg Leu Trp Met Lys Phe Val Ser Asp Gly Ser Ile Asn Lys  
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 Pro Asp His Gly Gly Cys Glu His Arg Cys Val Asn Thr Leu Gly Ser  
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 Ile Thr Ser Pro Gly Trp Pro Lys Glu Tyr Pro Thr Asn Lys Asn Cys  
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 Glu Val Arg Ser Gly Leu Ser Pro Asp Ala Lys Leu His Gly Arg Phe  
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 Cys Gly Ser Glu Thr Pro Glu Val Ile Thr Ser Gln Ser Asn Asn Met  
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 Arg Val Glu Phe Lys Ser Asp Asn Thr Val Ser Lys Arg Gly Phe Arg  
 690 695 700  
 Ala His Phe Phe Ser Asp Lys Asp Glu Cys Ala Lys Asp Asn Gly Gly  
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Cys Gln His Glu Cys Val Asn Thr Phe Gly Ser Tyr Leu Cys Arg Cys  
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Arg Asn Gly Tyr Trp Leu His Glu Asn Gly His Asp Cys Lys Glu Ala  
740 745 750

Gly Cys Ala His Lys Ile Ser Ser Val Glu Gly Thr Leu Ala Ser Pro  
755 760 765

Asn Trp Pro Asp Lys Tyr Pro Ser Arg Arg Glu Cys Thr Trp Asn Ile  
770 775 780

Ser Ser Thr Ala Gly His Arg Val Lys Leu Thr Phe Asn Glu Phe Glu  
785 790 795 800

Ile Glu Gln His Gln Glu Cys Ala Tyr Asp His Leu Glu Met Tyr Asp  
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Gly Pro Asp Ser Leu Ala Pro Ile Leu Gly Arg Phe Cys Gly Ser Lys  
820 825 830

Lys Pro Asp Pro Thr Val Ala Ser Gly Ser Lys Cys Gly Gly Arg Leu  
835 840 845

Lys Ala Glu Val Gln Thr Lys Glu Leu Tyr Ser His Ala Gln Phe Gly  
850 855 860

Asp Asn Asn Tyr Pro Ser Glu Ala Arg Cys Asp Trp Val Ile Val Ala  
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Glu Asp Gly Tyr Gly Val Glu Leu Thr Phe Arg Thr Phe Glu Val Glu  
885 890 895

Glu Glu Ala Asp Cys Gly Tyr Asp Tyr Met Glu Ala Tyr Asp Gly Tyr  
900 905 910

Asp Ser Ser Ala Pro Arg Leu Gly Arg Phe Cys Gly Ser Gly Pro Leu  
915 920 925

Glu Glu Ile Tyr Ser Ala Gly Asp Ser Leu Met Ile Arg Phe Arg Thr  
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<211> 1604

<212> DNA

<213> Homo sapiens

<400> 43

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 <211> 494  
 <212> PRT  
 <213> Homo sapiens

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 Val Leu Lys Ala Thr Asp Val Asn Glu Lys Val Cys Glu Trp Arg Pro  
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 Pro Glu Gln Leu Lys Gln Leu Leu Asp Leu Glu Met Arg Asp Ser Gly  
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 Glu Pro Pro His Lys Lys Leu Glu Leu Cys Arg Asp Val Ile His Tyr  
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 Ser Val Lys Thr Asp His Pro Arg Phe Phe Asn Gln Leu Tyr Ala Gly  
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 Leu Asp Tyr Tyr Ser Leu Val Ala Arg Phe Met Thr Glu Ala Leu Asn  
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 Pro Ser Ser Tyr Thr Tyr Glu Val Ser Pro Val Phe Leu Leu Val Glu  
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Glu Ala Val Leu Lys Lys Met Ile Glu Phe Ile Gly Trp Lys Glu Gly  
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 Asp Gly Ile Phe Asn Pro Gly Gly Ser Val Ser Asn Met Tyr Ala Met  
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 Asn Leu Ala Arg Tyr Lys Tyr Cys Pro Asp Ile Lys Glu Lys Gly Leu  
 165 170 175  
 Ser Gly Ser Pro Arg Leu Ile Leu Phe Thr Ser Ala Glu Cys His Tyr  
 180 185 190  
 Ser Met Lys Lys Ala Ala Ser Phe Leu Gly Ile Gly Thr Glu Asn Val  
 195 200 205  
 Cys Phe Val Glu Thr Asp Arg Gly Lys Met Ile Pro Glu Glu Leu Glu  
 210 215 220  
 Lys Gln Val Trp Gln Ala Arg Lys Glu Gly Ala Ala Pro Phe Leu Val  
 225 230 235 240  
 Cys Ala Thr Ser Gly Thr Thr Val Leu Gly Ala Phe Asp Pro Leu Asp  
 245 250 255  
 Glu Ile Ala Asp Ile Cys Glu Arg His Ser Leu Trp Leu His Val Asp  
 260 265 270  
 Ala Ser Trp Gly Gly Ser Ala Leu Met Ser Arg Lys His Arg Lys Leu  
 275 280 285  
 Leu His Gly Ile His Arg Ala Asp Ser Val Ala Trp Asn Pro His Lys  
 290 295 300  
 Met Leu Met Ala Gly Ile Gln Cys Cys Ala Leu Leu Val Lys Asp Lys  
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 Ser Asp Leu Glu Lys Arg Cys Gln Glu Phe Val Pro Ala Tyr Leu Trp  
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 Phe Thr His Glu Thr Gln Val Gly Arg Asn Cys Arg Ser Leu Trp Phe  
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 370 375 380  
 Met Leu Gly Asp Gly Arg Tyr Leu Val Asp Glu Ile Lys Lys Arg Glu  
 385 390 395 400  
 Gly Phe Lys Leu Leu Met Glu Pro Glu Tyr Ala Asn Ile Cys Phe Trp  
 405 410 415  
 Tyr Ile Pro Pro Ser Leu Arg Glu Met Glu Glu Gly Pro Glu Phe Trp  
 420 425 430

Ala Lys Leu Thr Gln Val Ala Pro Ala Ile Lys Glu Arg Met Met Lys  
435 440 445

Lys Gly Ser Leu Met Leu Gly Tyr Gln Pro His Phe Thr Lys Val Asn  
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Phe Phe Arg Gln Val Val Ile Ser Pro Gln Val Ser Arg Glu Asp Met  
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Asp Phe Leu Leu Asp Glu Ile Asp Leu Leu Gly Lys Asp Met  
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<211> 3564  
<212> PRT  
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Gly Gly Leu Val Gln Gly Pro Asn Gly Thr Ile Glu Ser Pro Gly Phe  
35 40 45

Pro His Gly Tyr Pro Asn Tyr Ala Asn Cys Thr Trp Ile Ile Ile Thr  
50 55 60

Gly Glu Arg Asn Arg Ile Gln Leu Ser Phe His Thr Phe Ala Leu Glu  
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Glu Asp Phe Asp Ile Leu Ser Val Tyr Asp Gly Gln Pro Gln Gln Gly  
85 90 95

Asn Leu Lys Val Arg Leu Ser Gly Phe Gln Leu Pro Ser Ser Ile Val  
100 105 110

Ser Thr Gly Ser Leu Leu Thr Leu Trp Phe Thr Thr Asp Phe Ala Val  
115 120 125

Ser Ala Gln Gly Phe Lys Ala Met Tyr Glu Val Leu Pro Ser His Thr  
130 135 140

Cys Gly Asn Pro Gly Glu Ile Leu Lys Gly Val Leu His Gly Thr Arg  
145 150 155 160

Phe Asn Ile Gly Asp Lys Ile Arg Tyr Ser Cys Leu Ser Gly Tyr Ile  
165 170 175

Leu Glu Gly His Ala Ile Leu Thr Cys Ile Val Ser Pro Gly Asn Gly  
180 185 190

Ala Ser Trp Asp Phe Pro Ala Pro Phe Cys Arg Ala Glu Gly Ala Cys

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Pro Ser Glu Tyr Asp Asn Asn Ala Asp Cys Thr Trp Thr Ile Leu Ala 225 230 235 240		
Glu Pro Gly Asp Thr Ile Ala Leu Val Phe Thr Asp Phe Gln Leu Glu 245 250 255		
Glu Gly Tyr Asp Phe Leu Glu Ile Ser Gly Thr Glu Ala Pro Ser Ile 260 265 270		
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Trp Leu Arg Leu His Phe Thr Ser Asp Ser Asn His Arg Arg Lys Gly 290 295 300		
Phe Asn Ala Gln Phe Gln Val Lys Lys Ala Ile Glu Leu Lys Ser Arg 305 310 315 320		
Gly Val Lys Met Leu Pro Ser Lys Asp Ser Ser His Lys Asn Ser Val 325 330 335		
Leu Thr Gln Gly Gly Val Ser Leu Ile Ser Asp Met Cys Pro Asp Pro 340 345 350		
Gly Ile Pro Asp Asn Gly Arg Arg Ala Gly Ser Asp Phe Arg Val Gly 355 360 365		
Ala Asn Val Gln Phe Ser Cys Glu Asp Asn Tyr Val Leu Gln Gly Ala 370 375 380		
Lys Gly Ile Thr Cys Gln Arg Val Thr Glu Thr Leu Ala Ala Trp Asn 385 390 395 400		
Asp His Arg Pro Ile Cys Arg Ala Arg Thr Cys Gly Ser Asn Leu Arg 405 410 415		
Gly Pro Ser Gly Val Ile Thr Ser Pro Asn Tyr Pro Val Gln Tyr Glu 420 425 430		
Asp Asn Ala His Cys Val Trp Val Ile Thr Thr Thr Asp Pro Asp Lys 435 440 445		
Val Ile Lys Leu Ala Phe Glu Glu Phe Glu Leu Glu Arg Gly Tyr Asp 450 455 460		
Thr Leu Thr Val Gly Asp Ala Gly Lys Val Gly Asp Thr Arg Ser Val 465 470 475 480		
Leu Tyr Val Leu Thr Gly Ser Ser Val Pro Asp Leu Ile Val Ser Met 485 490 495		
Ser Asn Gln Met Trp Leu His Leu Gln Ser Asp Asp Ser Ile Gly Ser		



805										810					815				
Gly	Pro	Thr	Ser	Ser	Ser	Pro	Leu	Ile	Gly	Glu	Tyr	His	Gly	Thr	Gln				
			820					825					830						
Ala	Pro	Gln	Phe	Leu	Ile	Ser	Thr	Gly	Asn	Tyr	Met	Tyr	Leu	Leu	Phe				
		835					840					845							
Thr	Thr	Asp	Ser	Ser	Arg	Ala	Ser	Val	Gly	Phe	Leu	Ile	His	Tyr	Glu				
		850				855					860								
Ser	Val	Thr	Leu	Glu	Ser	Asp	Ser	Cys	Leu	Asp	Pro	Gly	Ile	Pro	Val				
865					870					875				880					
Asn	Gly	Gln	Arg	His	Gly	Ser	Asn	Phe	Gly	Ile	Arg	Ser	Thr	Val	Thr				
				885					890					895					
Phe	Ser	Cys	Asp	Pro	Gly	Tyr	Thr	Leu	Ser	Asp	Asp	Glu	Pro	Leu	Val				
			900					905					910						
Cys	Glu	Lys	Asn	His	Gln	Trp	Asn	His	Ala	Leu	Pro	Ser	Cys	Asp	Ala				
		915					920					925							
Leu	Cys	Gly	Gly	Tyr	Ile	His	Gly	Lys	Ser	Gly	Thr	Val	Leu	Ser	Pro				
		930				935					940								
Gly	Phe	Pro	Asp	Phe	Tyr	Pro	Asn	Ser	Leu	Asn	Cys	Thr	Trp	Thr	Ile				
945					950					955					960				
Glu	Val	Ser	His	Gly	Lys	Gly	Val	Gln	Met	Asn	Phe	His	Thr	Phe	His				
				965					970					975					
Leu	Glu	Ser	Ser	His	Asp	Tyr	Leu	Leu	Ile	Thr	Glu	Asp	Gly	Ser	Phe				
			980					985					990						
Ser	Glu	Pro	Val	Ala	Arg	Leu	Thr	Gly	Ser	Val	Leu	Pro	His	Thr	Ile				
		995				1000						1005							
Lys	Ala	Gly	Leu	Phe	Gly	Asn	Phe	Thr	Ala	Gln	Leu	Arg	Phe	Ile	Ser				
		1010				1015					1020								
Asp	Phe	Ser	Ile	Ser	Tyr	Glu	Gly	Phe	Asn	Ile	Thr	Phe	Ala	Glu	Tyr				
1025				1030					1035					1040					
Asp	Leu	Glu	Pro	Cys	Asp	Asp	Pro	Gly	Val	Pro	Ala	Phe	Ser	Arg	Arg				
			1045					1050					1055						
Ile	Gly	Phe	Gln	Phe	Gly	Val	Gly	Asp	Thr	Leu	Ala	Phe	Thr	Cys	Phe				
		1060					1065						1070						
Gln	Gly	Tyr	Arg	Leu	Glu	Gly	Ala	Thr	Lys	Leu	Thr	Cys	Leu	Gly	Gly				
		1075					1080					1085							
Gly	Arg	Arg	Val	Trp	Ser	Ala	Pro	Leu	Pro	Arg	Cys	Val	Ala	Glu	Cys				
		1090				1095					1100								
Gly	Ala	Ser	Val	Lys	Gly	Asn	Glu	Gly	Thr	Leu	Leu	Ser	Pro	Asn	Phe				



1105	1110	1115	1120
Pro Ser His Tyr Asp Asn Asn His Glu Cys Ile Tyr Lys Ile Glu Thr	1125	1130	1135
Glu Ala Gly Lys Gly Ile His Leu Arg Ala Arg Thr Phe Gln Leu Phe	1140	1145	1150
Glu Gly Asp Thr Leu Lys Val Tyr Asp Gly Lys Asp Ser Ser Ser Arg	1155	1160	1165
Ser Leu Gly Val Phe Thr Arg Ser Glu Phe Met Gly Leu Val Leu Asn	1170	1175	1180
Ser Thr Ser Asn Tyr Leu Arg Leu Glu Phe Asn Thr Asn Gly Ser Asp	1185	1190	1195
Thr Ala Gln Gly Phe Gln Leu Thr Tyr Thr Ser Phe Asp Leu Val Lys	1205	1210	1215
Cys Glu Asp Pro Gly Ile Pro Asn Tyr Gly Tyr Arg Ile Arg Asp Asp	1220	1225	1230
Gly His Phe Thr Asp Thr Val Val Leu Tyr Ser Cys Asn Pro Gly Tyr	1235	1240	1245
Ala Met His Gly Ser Ser Thr Leu Thr Cys Leu Ser Gly Asp Arg Arg	1250	1255	1260
Val Trp Asp Lys Pro Met Pro Ser Cys Val Ala Glu Cys Gly Gly Leu	1265	1270	1275
Val His Ala Ala Thr Ser Gly Arg Ile Leu Ser Pro Gly Tyr Pro Ala	1285	1290	1295
Pro Tyr Asp Asn Asn Leu His Cys Thr Trp Thr Ile Glu Ala Asp Pro	1300	1305	1310
Gly Lys Thr Ile Ser Leu His Phe Ile Val Phe Asp Thr Glu Thr Ala	1315	1320	1325
His Asp Ile Leu Lys Val Trp Asp Gly Pro Val Asp Ser Asn Ile Leu	1330	1335	1340
Leu Lys Glu Trp Ser Gly Ser Ala Leu Pro Glu Asp Ile His Ser Thr	1345	1350	1355
Phe Asn Ser Leu Thr Leu Gln Phe Asp Ser Asp Phe Phe Ile Ser Lys	1365	1370	1375
Ser Gly Phe Ser Ile Gln Phe Ser Thr Ser Ile Ala Ser Thr Cys Asn	1380	1385	1390
Asp Pro Gly Met Pro Gln Asn Gly Thr Arg Tyr Gly Asp Ser Arg Glu	1395	1400	1405
Pro Gly Asp Thr Ile Thr Phe Gln Cys Asp Pro Gly Tyr Gln Leu Gln			

1410	1415	1420
Gly Pro Ala Lys Ile Thr Cys Val Gln Leu Asn Asn Arg Phe Phe Trp		
1425	1430	1435 1440
Gln Pro Asp Pro Pro Ser Cys Ile Ala Ala Cys Gly Gly Asn Leu Thr		
	1445	1450 1455
Gly Pro Ala Gly Val Ile Leu Ser Pro Asn Tyr Pro Gln Pro Tyr Pro		
	1460	1465 1470
Pro Gly Lys Glu Cys Asp Trp Arg Ile Lys Val Asn Pro Asp Phe Val		
	1475	1480 1485
Ile Ala Leu Ile Phe Lys Ser Phe Ser Met Glu Pro Ser Tyr Asp Phe		
	1490	1495 1500
Leu His Ile Tyr Glu Gly Glu Asp Ser Asn Ser Pro Leu Ile Gly Ser		
	1505	1510 1515 1520
Phe Gln Gly Ser Gln Ala Pro Glu Arg Ile Glu Ser Ser Gly Asn Ser		
	1525	1530 1535
Leu Phe Leu Ala Phe Arg Ser Asp Ala Ser Val Gly Leu Ser Gly Phe		
	1540	1545 1550
Ala Ile Glu Phe Lys Glu Lys Pro Arg Glu Ala Cys Phe Asp Pro Gly		
	1555	1560 1565
Asn Ile Met Asn Gly Thr Arg Ile Gly Thr Asp Phe Lys Leu Gly Ser		
	1570	1575 1580
Thr Val Thr Tyr Gln Cys Asp Ser Gly Tyr Lys Ile Val Asp Pro Ser		
	1585	1590 1595 1600
Ser Ile Glu Cys Val Thr Gly Ala Asp Gly Lys Pro Ser Trp Asp Arg		
	1605	1610 1615
Ala Leu Pro Ala Cys Gln Ala Pro Cys Gly Gly Gln Tyr Thr Gly Ser		
	1620	1625 1630
Glu Gly Val Val Leu Ser Pro Asn Tyr Pro His Asn Tyr Thr Ala Gly		
	1635	1640 1645
Gln Met Cys Val Tyr Ser Ile Thr Val Pro Lys Glu Phe Val Val Phe		
	1650	1655 1660
Gly Gln Phe Ala Tyr Phe Gln Thr Ala Leu Asn Asp Leu Ala Glu Leu		
	1665	1670 1675 1680
Phe Asp Gly Thr His Pro Gln Ala Arg Leu Leu Ser Ser Leu Ser Gly		
	1685	1690 1695
Ser His Ser Gly Glu Thr Leu Pro Leu Ala Thr Ser Asn Gln Ile Leu		
	1700	1705 1710
Leu Arg Phe Ser Ala Lys Ser Gly Ala Ser Ala Arg Gly Phe His Phe		

1715	1720	1725
Val Tyr Gln Ala Val Pro Arg Thr Ser Asp Thr Gln Cys Ser Ser Val		
1730	1735	1740
Pro Glu Pro Arg Tyr Gly Arg Arg Ile Gly Ser Glu Phe Ser Ala Gly		
1745	1750	1755 1760
Ser Ile Val Arg Phe Glu Cys Asn Pro Gly Tyr Leu Leu Gln Gly Ser		
1765	1770	1775
Thr Ala Ile Arg Cys Gln Ser Val Pro Asn Ala Leu Ala Gln Trp Asn		
1780	1785	1790
Asp Thr Ile Pro Ser Cys Val Val Pro Cys Ser Gly Asn Phe Thr Gln		
1795	1800	1805
Arg Arg Gly Thr Ile Leu Ser Pro Gly Tyr Pro Glu Pro Tyr Gly Asn		
1810	1815	1820
Asn Leu Asn Cys Val Trp Lys Ile Ile Val Ser Glu Gly Ser Gly Ile		
1825	1830	1835 1840
Gln Ile Gln Val Ile Ser Phe Ala Thr Glu Gln Asn Trp Asp Ser Leu		
1845	1850	1855
Glu Ile His Asp Gly Gly Asp Met Thr Ala Pro Arg Leu Gly Ser Phe		
1860	1865	1870
Ser Gly Thr Thr Val Pro Ala Leu Leu Asn Ser Thr Ser Asn Gln Leu		
1875	1880	1885
Cys Leu His Phe Gln Ser Asp Ile Ser Val Ala Ala Ala Gly Phe His		
1890	1895	1900
Leu Glu Tyr Lys Thr Val Gly Leu Ala Ala Cys Gln Glu Pro Ala Leu		
1905	1910	1915 1920
Pro Ser Asn Gly Ile Lys Ile Gly Asp Arg Tyr Met Val Asn Asp Val		
1925	1930	1935
Leu Ser Phe Gln Cys Glu Pro Gly Tyr Thr Leu Gln Gly Arg Ser His		
1940	1945	1950
Ile Ser Cys Met Pro Gly Thr Val Arg Arg Trp Asn Tyr Pro Ser Pro		
1955	1960	1965
Leu Cys Ile Ala Thr Cys Gly Gly Thr Leu Thr Ser Met Ser Gly Val		
1970	1975	1980
Ile Leu Ser Pro Gly Phe Pro Gly Ser Tyr Pro Asn Asn Leu Asp Cys		
1985	1990	1995 2000
Thr Trp Lys Ile Ser Leu Pro Ile Gly Tyr Gly Ala His Ile Gln Phe		
2005	2010	2015
Leu Asn Phe Ser Thr Glu Ala Asn His Asp Tyr Leu Glu Ile Gln Asn		

2020	2025	2030
Gly Pro Tyr His Ser Ser Pro Met Met Gly Gln Phe Ser Gly Pro Asp 2035 2040 2045		
Leu Pro Thr Ser Leu Leu Ser Thr Thr His Glu Thr Leu Ile Arg Phe 2050 2055 2060		
Tyr Ser Asp His Ser Gln Asn Arg Gln Gly Phe Lys Leu Ser Tyr Gln 2065 2070 2075 2080		
Ala Tyr Glu Leu Gln Asn Cys Pro Asp Pro Pro Ala Phe Gln Asn Gly 2085 2090 2095		
Phe Met Ile Asn Ser Asp Tyr Ser Val Gly Gln Ser Ile Ser Phe Glu 2100 2105 2110		
Cys Tyr Pro Gly Tyr Ile Leu Leu Gly His Pro Val Leu Thr Cys Gln 2115 2120 2125		
His Gly Thr Asp Arg Asn Trp Asn Tyr Pro Phe Pro Arg Cys Asp Ala 2130 2135 2140		
Pro Cys Gly Tyr Asn Val Thr Ser Gln Asn Gly Thr Ile Tyr Ser Pro 2145 2150 2155 2160		
Gly Phe Pro Asp Glu Tyr Pro Ile Leu Lys Asp Cys Leu Trp Leu Val 2165 2170 2175		
Thr Val Pro Pro Gly His Gly Val Tyr Ile Asn Phe Thr Leu Leu Gln 2180 2185 2190		
Thr Glu Ala Val Asn Asp Tyr Ile Ala Val Trp Asp Gly Pro Asp Gln 2195 2200 2205		
Asn Ser Pro Gln Leu Gly Val Phe Ser Gly Asn Thr Ala Pro Glu Thr 2210 2215 2220		
Ala Tyr Ser Ser Thr Asn Gln Val Leu Leu Lys Phe His Ser Asp Phe 2225 2230 2235 2240		
Ser Asn Gly Gly Phe Phe Val Leu Asn Phe His Ala Phe Gln Leu Lys 2245 2250 2255		
Arg Cys Pro Pro Pro Pro Ala Val Pro Gln Ala Asp Leu Leu Thr Glu 2260 2265 2270		
Asp Glu Asp Phe Glu Ile Gly Asp Phe Val Lys Tyr Gln Cys His Pro 2275 2280 2285		
Gly Tyr Thr Leu Leu Gly Ser Asp Thr Leu Thr Cys Lys Leu Ser Ser 2290 2295 2300		
Gln Leu Leu Phe Gln Gly Ser Pro Pro Thr Cys Glu Ala Gln Cys Pro 2305 2310 2315 2320		
Ala Asn Glu Val Arg Thr Glu Ser Ser Gly Val Ile Leu Ser Pro Gly		

2325	2330	2335
Tyr Pro Gly Asn Tyr Phe Asn Ser Gln Thr Cys Ala Trp Ser Ile Lys		
2340	2345	2350
Val Lys Pro Asn Phe Asn Ile Thr Leu Phe Val Asp Thr Phe Gln Ser		
2355	2360	2365
Glu Lys Gln Phe Asp Ala Leu Glu Val Phe Asp Gly Ser Ser Gly Arg		
2370	2375	2380
Ser Pro Leu Leu Val Val Leu Ser Gly Asn His Thr Glu Gln Ser Asn		
2385	2390	2400
Phe Thr Ser Arg Ser Asn His Leu Tyr Leu Arg Trp Ser Thr Asp His		
2405	2410	2415
Ala Thr Ser Lys Lys Gly Phe Lys Ile Arg Tyr Ala Ala Pro Tyr Cys		
2420	2425	2430
Ser Leu Thr Ser Thr Leu Arg Asn Gly Gly Ile Leu Asn Lys Thr Ala		
2435	2440	2445
Gly Ala Val Gly Ser Lys Val His Tyr Phe Cys Lys Pro Gly Tyr Arg		
2450	2455	2460
Met Ile Gly His Ser Asn Ala Thr Cys Arg Arg Asn Pro Val Gly Val		
2465	2470	2475
Tyr Gln Trp Asp Ser Met Ala Pro Leu Cys Gln Ala Val Ser Cys Gly		
2485	2490	2495
Ile Pro Glu Ala Pro Gly Asn Gly Ser Phe Thr Gly Asn Glu Phe Thr		
2500	2505	2510
Leu Asp Ser Lys Val Thr Tyr Glu Cys Asn Glu Gly Phe Lys Leu Asp		
2515	2520	2525
Ala Ser Gln Glu Ala Thr Thr Val Cys Gln Glu Asp Gly Leu Trp Ser		
2530	2535	2540
Asn Arg Gly Lys Pro Pro Thr Cys Lys Pro Val Pro Cys Pro Ser Ile		
2545	2550	2555
Glu Gly Gln Leu Ser Glu His Val Leu Trp Arg Leu Val Ser Gly Ser		
2565	2570	2575
Leu Asn Glu Tyr Gly Ala Gln Val Leu Leu Ser Cys Ser Pro Gly Tyr		
2580	2585	2590
Phe Leu Gln Gly Gln Arg Leu Leu Gln Cys Gln Ala Asn Gly Thr Trp		
2595	2600	2605
Ser Thr Glu Glu Asp Arg Pro Arg Cys Lys Val Ile Ser Cys Gly Ser		
2610	2615	2620
Leu Ser Phe Pro Pro Asn Gly Asn Lys Ile Gly Thr Leu Thr Ile Tyr		

2625	2630	2635	2640
Gly Ala Thr Ala Ile Phe Thr Cys Asn Thr Gly Tyr Thr Leu Val Gly	2645	2650	2655
Ser His Val Arg Glu Cys Leu Ala Asn Gly Leu Trp Ser Gly Ser Glu	2660	2665	2670
Thr Arg Cys Leu Ala Gly His Cys Gly Ser Pro Asp Pro Ile Val Asn	2675	2680	2685
Gly His Ile Ser Gly Asp Gly Phe Ser Tyr Arg Asp Thr Val Val Tyr	2690	2695	2700
Gln Cys Asn Pro Gly Phe Arg Leu Val Gly Thr Ser Val Arg Ile Cys	2705	2710	2715
Cys Arg Thr Thr Ser Gly Arg Gly Arg Leu Thr Val Cys Val Pro Ile	2725	2730	2735
Thr Cys Gly His Pro Gly Asn Pro Ala His Gly Leu Thr Asn Gly Thr	2740	2745	2750
Glu Phe Asn Leu Asn Asp Leu Val Asn Phe Thr Cys His Thr Gly Tyr	2755	2760	2765
Arg Leu Gln Gly Ala Ser Arg Ala Gln Cys Arg Ser Asn Gly Gln Trp	2770	2775	2780
Ser Ser Pro Leu Pro Ile Cys Arg Val Val Asn Cys Ser Asp Pro Gly	2785	2790	2795
Ser Val Glu Asn Ala Val Arg His Gly Gln Gln Asn Phe Pro Glu Ser	2805	2810	2815
Phe Glu Tyr Gly Thr Ser Val Met Tyr His Cys Lys Thr Gly Phe Tyr	2820	2825	2830
Leu Leu Gly Ser Ser Ala Leu Thr Cys Met Ala Ser Gly Leu Trp Asp	2835	2840	2845
Arg Ser Leu Pro Lys Cys Leu Ala Ile Ser Cys Gly His Pro Gly Val	2850	2855	2860
Pro Ala Asn Ala Val Leu Thr Gly Glu Leu Phe Thr Tyr Gly Ala Thr	2865	2870	2875
Val Gln Tyr Ser Cys Lys Gly Gly Gln Ile Leu Thr Gly Asn Ser Thr	2885	2890	2895
Arg Val Cys Gln Glu Asp Ser His Trp Ser Gly Ser Leu Pro His Cys	2900	2905	2910
Ser Gly Asn Ser Pro Gly Phe Cys Gly Asp Pro Gly Thr Pro Ala His	2915	2920	2925
Gly Ser Arg Leu Gly Asp Glu Phe Lys Thr Lys Ser Leu Leu Arg Phe			



3235	3240	3245
Ile Gln Gly Ser Thr Thr Arg Thr Cys Leu Ala Asn Leu Thr Trp Ser		
3250	3255	3260
Gly Ile Gln Thr Glu Cys Ile Pro His Ala Cys Arg Gln Pro Glu Thr		
3265	3270	3275 3280
Pro Ala His Ala Asp Val Arg Ala Ile Asp Leu Pro Ala Phe Gly Tyr		
3285	3290	3295
Thr Leu Val Tyr Thr Cys His Pro Gly Phe Phe Leu Ala Gly Gly Ser		
3300	3305	3310
Glu His Arg Thr Cys Lys Ala Asp Met Lys Trp Thr Gly Lys Ser Pro		
3315	3320	3325
Val Cys Lys Ser Lys Gly Val Arg Glu Val Asn Glu Thr Val Thr Lys		
3330	3335	3340
Thr Pro Val Pro Ser Asp Val Phe Phe Ile Asn Ser Val Trp Lys Gly		
3345	3350	3355 3360
Tyr Tyr Glu Tyr Leu Gly Lys Arg Gln Pro Ala Thr Leu Thr Val Asp		
3365	3370	3375
Trp Phe Asn Ala Thr Ser Ser Lys Val Asn Ala Thr Phe Thr Ala Ala		
3380	3385	3390
Ser Arg Val Gln Leu Glu Leu Thr Gly Val Tyr Lys Lys Glu Glu Ala		
3395	3400	3405
His Leu Leu Leu Lys Ala Phe His Ile Lys Gly Pro Ala Asp Ile Phe		
3410	3415	3420
Val Ser Lys Phe Glu Asn Asp Asn Trp Gly Leu Asp Gly Tyr Val Ser		
3425	3430	3435 3440
Ser Gly Leu Glu Arg Gly Gly Phe Ser Phe Gln Gly Asp Ile His Gly		
3445	3450	3455
Lys Asp Phe Gly Lys Phe Lys Leu Glu Arg Gln Asp Pro Ser Asn Ser		
3460	3465	3470
Asp Ala Asp Ser Ser Asn His Tyr Gln Gly Thr Ser Ser Gly Ser Val		
3475	3480	3485
Ala Ala Ala Ile Leu Val Pro Phe Phe Ala Leu Ile Leu Ser Gly Phe		
3490	3495	3500
Ala Phe Tyr Leu Tyr Lys His Arg Thr Arg Pro Lys Val Gln Tyr Asn		
3505	3510	3515 3520
Gly Tyr Ala Gly His Glu Asn Ser Asn Gly Gln Ala Ser Phe Glu Asn		
3525	3530	3535
Pro Met Tyr Asp Thr Asn Leu Lys Pro Thr Glu Ala Lys Ala Val Arg		



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 Phe Asp Thr Thr Leu Asn Thr Val Cys Thr Val Val  
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 Leu Val Leu Cys Ala Arg Leu Leu Thr Ala Ala Lys Gly Gln Asn Cys  
           20                      25                      30  
  
 Gly Gly Leu Val Gln Gly Pro Asn Gly Thr Ile Glu Ser Pro Gly Phe  
           35                      40                      45  
  
 Pro His Gly Tyr Pro Asn Tyr Ala Asn Cys Thr Trp Ile Ile Ile Thr  
           50                      55                      60  
  
 Gly Glu Arg Asn Arg Ile Gln Leu Ser Phe His Thr Phe Ala Leu Glu  
       65                      70                      75                      80  
  
 Glu Asn Phe Asp Ile Leu Ser Val Tyr Asp Gly Gln Pro Gln Gln Gly  
           85                      90                      95  
  
 Asn Leu Lys Val Arg Leu Ser Gly Phe Gln Leu Pro Ser Ser Ile Val  
           100                      105                      110  
  
 Ser Thr Gly Ser Ile Leu Thr Leu Trp Phe Thr Thr Asp Phe Ala Val  
           115                      120                      125  
  
 Ser Ala Gln Gly Phe Lys Ala Leu Tyr Glu Val Leu Pro Ser His Thr  
           130                      135                      140  
  
 Cys Gly Asn Pro Gly Glu Ile Leu Lys Gly Val Leu His Gly Thr Arg  
       145                      150                      155                      160  
  
 Phe Asn Ile Gly Asp Lys Ile Arg Tyr Ser Cys Leu Pro Gly Tyr Ile  
           165                      170                      175  
  
 Leu Glu Gly His Ala Ile Leu Thr Cys Ile Val Ser Pro Gly Asn Gly  
           180                      185                      190  
  
 Ala Ser Trp Asp Phe Pro Ala Pro Phe Cys Arg Ala Glu Gly Ala Cys  
           195                      200                      205  
  
 Gly Gly Thr Leu Arg Gly Thr Ser Ser Ser Ile Ser Ser Pro His Phe  
           210                      215                      220  
  
 Pro Ser Glu Tyr Glu Asn Asn Ala Asp Cys Thr Trp Thr Ile Leu Ala  
       225                      230                      235                      240

Glu Pro Gly Asp Thr Ile Ala Leu Val Phe Thr Asp Phe Gln Leu Glu  
 245 250 255  
 Glu Gly Tyr Asp Phe Leu Glu Ile Ser Gly Thr Glu Ala Pro Ser Ile  
 260 265 270  
 Trp Leu Thr Gly Met Asn Leu Pro Ser Pro Val Ile Ser Ser Lys Asn  
 275 280 285  
 Trp Leu Arg Leu His Phe Thr Ser Asp Ser Asn His Arg Arg Lys Gly  
 290 295 300  
 Phe Asn Ala Gln Phe Gln Val Lys Lys Ala Ile Glu Leu Lys Ser Arg  
 305 310 315 320  
 Gly Val Lys Met Leu Pro Ser Lys Asp Gly Ser His Lys Asn Ser Val  
 325 330 335  
 Leu Ser Gln Gly Gly Val Ala Leu Val Ser His Met Cys Leu Asp Pro  
 340 345 350  
 Gly Ile Pro Glu Asn Gly Arg Arg Ala Gly Ser Asp Phe Ser Arg Val  
 355 360 365  
 Gly Ala Asn Val Gln Phe Ser Cys Glu Asp Asn Tyr Val Leu Gln Gly  
 370 375 380  
 Ser Lys Ser Ile Thr Cys Gln Arg Val Thr Glu Thr Leu Ala Ala Trp  
 385 390 395 400  
 Ser Asp His Arg Pro Ile Cys Arg Ala Arg Thr Cys Gly Ser Asn Leu  
 405 410 415  
 Arg Gly Pro Ser Gly Val Ile Thr Ser Pro Asn Tyr Pro Val Gln Tyr  
 420 425 430  
 Glu Asp Asn Ala His Cys Val Trp Val Ile Thr Thr Thr Asp Pro Asp  
 435 440 445  
 Lys Val Ile Lys Leu Ala Phe Glu Glu Phe Glu Leu Glu Arg Gly Tyr  
 450 455 460  
 Asp Thr Leu Thr Val Gly Asp Ala Gly Lys Val Gly Asp Thr Arg Ser  
 465 470 475 480  
 Val Leu Tyr Val Leu Thr Gly Ser Ser Val Pro Asp Leu Ile Val Ser  
 485 490 495  
 Met Ser Asn Gln Met Trp Leu His Leu Gln Ser Asp Asp Ser Ile Gly  
 500 505 510  
 Ser Pro Gly Phe Lys Ala Val Tyr Gln Glu Ile Glu Lys Gly Gly Cys  
 515 520 525  
 Gly Asp Pro Gly Ile Pro Ala Tyr Gly Lys Arg Thr Gly Ser Ser Phe  
 530 535 540

Leu His Gly Asp Thr Leu Thr Phe Glu Cys Pro Ala Ala Phe Glu Leu  
 545 550 555 560  
 Val Gly Glu Arg Val Ile Thr Cys Gln Gln Asn Asn Gln Trp Ser Gly  
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 Asn Lys Pro Ser Cys Val Phe Ser Cys Phe Phe Asn Phe Thr Ala Ser  
 580 585 590  
 Ser Gly Ile Ile Leu Ser Pro Asn Tyr Pro Glu Glu Tyr Gly Asn Asn  
 595 600 605  
 Met Asn Cys Val Trp Leu Ile Ile Ser Glu Pro Gly Ser Arg Ile His  
 610 615 620  
 Leu Ile Phe Asn Asp Phe Asp Val Glu Pro Gln Phe Asp Phe Leu Ala  
 625 630 635 640  
 Val Lys Asp Asn Gly Ile Ser Asp Ile Thr Val Leu Gly Thr Phe Ser  
 645 650 655  
 Gly Asn Glu Val Pro Ser Gln Leu Ala Ser Ser Gly His Ile Val Arg  
 660 665 670  
 Leu Glu Phe Gln Ser Asp His Ser Thr Thr Gly Arg Gly Phe Asn Ile  
 675 680 685  
 Thr Tyr Thr Thr Phe Gly Gln Asn Glu Cys His Asp Pro Gly Ile Pro  
 690 695 700  
 Ile Asn Gly Arg Arg Phe Gly Asp Arg Phe Leu Leu Gly Ser Ser Val  
 705 710 715 720  
 Ser Phe His Cys Asp Asp Gly Phe Val Lys Thr Gln Gly Ser Glu Ser  
 725 730 735  
 Ile Thr Cys Ile Leu Gln Asp Gly Asn Val Val Trp Ser Ser Thr Val  
 740 745 750  
 Pro Arg Cys Glu Ala Pro Cys Gly Gly His Leu Thr Ala Ser Ser Gly  
 755 760 765  
 Val Ile Leu Pro Pro Gly Trp Pro Gly Tyr Tyr Lys Asp Ser Leu His  
 770 775 780  
 Cys Glu Trp Ile Ile Glu Ala Lys Pro Gly His Ser Ile Lys Met Thr  
 785 790 795 800  
 Phe Asp Arg Phe Gln Thr Glu Val Asn Tyr Asp Thr Leu Glu Val Arg  
 805 810 815  
 Asp Gly Pro Ala Ser Ser Ser Pro Leu Ile Gly Glu Tyr His Gly Thr  
 820 825 830  
 Gln Ala Pro Gln Phe Leu Ile Ser Thr Gly Asn Phe Met Tyr Leu Leu  
 835 840 845

Phe Thr Thr Asp Asn Ser Arg Ser Ser Ile Gly Phe Leu Ile His Tyr  
850 855 860  
Glu Ser Val Thr Leu Glu Ser Asp Ser Cys Leu Asp Pro Gly Ile Pro  
865 870 875 880  
Val Asn Gly His Arg His Gly Gly Asp Phe Gly Ile Arg Ser Thr Val  
885 890 895  
Thr Phe Ser Cys Asp Pro Gly Tyr Thr Leu Ser Asp Asp Glu Pro Leu  
900 905 910  
Val Cys Glu Arg Asn His Gln Trp Asn His Ala Leu Pro Ser Cys Asp  
915 920 925  
Ala Leu Cys Gly Gly Tyr Ile Gln Gly Lys Ser Gly Thr Val Leu Ser  
930 935 940  
Pro Gly Phe Pro Asp Phe Tyr Pro Asn Ser Leu Asn Cys Thr Trp Thr  
945 950 955 960  
Ile Glu Val Ser His Gly Lys Gly Val Gln Met Ile Phe His Thr Phe  
965 970 975  
His Leu Glu Ser Ser His Asp Tyr Leu Leu Ile Thr Glu Asp Gly Ser  
980 985 990  
Phe Ser Glu Pro Val Ala Arg Leu Thr Gly Ser Val Leu Pro His Thr  
995 1000 1005  
Ile Lys Ala Gly Leu Phe Gly Asn Phe Thr Ala Gln Leu Arg Phe Ile  
1010 1015 1020  
Ser Asp Phe Ser Ile Ser Tyr Glu Gly Phe Asn Ile Thr Phe Ser Glu  
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Tyr Asp Leu Glu Pro Cys Asp Asp Pro Gly Val Pro Ala Phe Ser Arg  
1045 1050 1055  
Arg Ile Gly Phe His Phe Gly Val Gly Asp Ser Leu Thr Phe Ser Cys  
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Phe Leu Gly Tyr Arg Leu Glu Gly Ala Thr Lys Leu Thr Cys Leu Gly  
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Gly Gly Arg Arg Val Trp Ser Ala Pro Leu Pro Arg Cys Val Ala Glu  
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Cys Gly Ala Ser Val Lys Gly Asn Glu Gly Thr Leu Leu Ser Pro Asn  
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Phe Pro Ser Asn Tyr Asp Asn Thr His Glu Cys Ile Tyr Lys Ile Glu  
1125 1130 1135  
Thr Glu Ala Gly Lys Gly Ile His Leu Arg Thr Arg Ser Phe Gln Leu  
1140 1145 1150

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 Asp Cys Thr Trp Arg Ile Ser Leu Pro Ile Gly Tyr Gly Ala His Ile  
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Gly Gly Leu Val Gln Gly Pro Asn Gly Thr Ile Glu Ser Pro Gly Phe  
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Pro His Gly Tyr Pro Asn Tyr Ala Asn Cys Thr Trp Ile Ile Ile Thr  
           50                                  55                                  60

Gly Glu Arg Asn Arg Ile Gln Leu Ser Phe His Thr Phe Ala Leu Glu  
   65                                  70                                  75                                  80

Glu Asn Phe Asp Ile Leu Ser Val Tyr Asp Gly Gln Pro Gln Gln Gly  
                                   85                                  90                                  95

Asn Leu Lys Val Arg Leu Ser Gly Phe Gln Leu Pro Ser Ser Ile Val  
                                   100                                  105                                  110

Ser Thr Gly Ser Ile Leu Thr Leu Trp Phe Thr Thr Asp Phe Ala Val  
           115                                  120                                  125

Ser Ala Gln Gly Phe Lys Ala Leu Tyr Glu Val Leu Pro Ser His Thr  
   130                                  135                                  140

Cys Gly Asn Pro Gly Glu Ile Leu Lys Gly Val Leu His Gly Thr Arg  
  145                                  150                                  155                                  160

Phe Asn Ile Gly Asp Lys Ile Arg Tyr Ser Cys Leu Pro Gly Tyr Ile  
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Leu Glu Gly His Ala Ile Leu Thr Cys Ile Val Ser Pro Gly Asn Gly  
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Ala Ser Trp Asp Phe Pro Ala Pro Phe Cys Arg Ala Glu Gly Ala Cys  
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Glu Pro Gly Asp Thr Ile Ala Leu Val Phe Thr Asp Phe Gln Leu Glu  
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Trp Leu Thr Gly Met Asn Leu Pro Ser Pro Val Ile Ser Ser Lys Asn  
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 Gly Ala Asn Val Gln Phe Ser Cys Glu Asp Asn Tyr Val Leu Gln Gly  
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770 775 780  
Cys Glu Trp Ile Ile Glu Ala Lys Pro Gly His Ser Ile Lys Met Thr  
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1605 1610 1615  
Gln Val Leu Pro Ser Cys Asn Ala Pro Cys Gly Gly Gln Tyr Thr Gly  
1620 1625 1630  
Ser Glu Gly Val Val Leu Ser Pro Asn Tyr Pro His Asn Tyr Thr Ala  
1635 1640 1645  
Gly Gln Ile Cys Leu Tyr Ser Ile Thr Val Pro Lys Glu Phe Val Val  
1650 1655 1660  
Phe Gly Gln Phe Ala Tyr Phe Gln Thr Ala Leu Asn Asp Leu Ala Glu  
1665 1670 1675 1680  
Leu Phe Asp Gly Thr His Ala Gln Ala Arg Leu Leu Ser Ser Leu Ser  
1685 1690 1695  
Gly Ser His Ser Gly Glu Thr Leu Pro Leu Ala Thr Ser Asn Gln Ile  
1700 1705 1710  
Leu Leu Arg Phe Ser Ala Lys Ser Gly Ala Ser Ala Arg Gly Phe His  
1715 1720 1725  
Phe Val Tyr Gln Ala Val Pro Arg Thr Ser Asp Thr Gln Cys Ser Ser  
1730 1735 1740  
Val Pro Glu Pro Arg Tyr Gly Arg Arg Ile Gly Ser Glu Phe Ser Ala  
1745 1750 1755 1760  
Gly Ser Ile Val Arg Phe Glu Cys Asn Pro Gly Tyr Leu Leu Gln Gly  
1765 1770 1775  
Ser Thr Ala Leu His Cys Gln Ser Val Pro Asn Ala Leu Ala Gln Trp  
1780 1785 1790  
Asn Asp Thr Ile Pro Ser Cys Val Val Pro Cys Ser Gly Asn Phe Thr  
1795 1800 1805  
Gln Arg Arg Gly Thr Ile Leu Ser Pro Gly Tyr Pro Glu Pro Tyr Gly  
1810 1815 1820  
Asn Asn Leu Asn Cys Ile Trp Lys Ile Ile Val Thr Glu Gly Ser Gly  
1825 1830 1835 1840  
Ile Gln Asp Pro Ser Asp Gln Phe Cys His Gly Ala Glu Leu Gly Leu  
1845 1850 1855

Pro Phe Glu Ile His Asp Gly Gly Asp Val Thr Ala Pro Arg Leu Gly  
 1860 1865 1870  
 Ser Phe Ser Gly Thr Thr Val Pro Ala Leu Leu Asn Ser Thr Ser Asn  
 1875 1880 1885  
 Gln Leu Tyr Leu His Phe Gln Ser Asp Ile Ser Val Ala Ala Ala Gly  
 1890 1895 1900  
 Phe His Leu Glu Tyr Lys Thr Val Gly Leu Ala Ala Cys Gln Glu Pro  
 1905 1910 1915 1920  
 Ala Leu Pro Ser Asn Ser Ile Lys Ile Gly Asp Arg Tyr Met Val Asn  
 1925 1930 1935  
 Asp Val Leu Ser Phe Gln Cys Glu Pro Gly Tyr Thr Leu Gln Gly Arg  
 1940 1945 1950  
 Ser His Ile Ser Cys Met Pro Gly Thr Val Arg Arg Trp Asn Tyr Pro  
 1955 1960 1965  
 Ser Pro Leu Cys Ile Ala Thr Cys Gly Gly Thr Leu Ser Thr Leu Gly  
 1970 1975 1980  
 Gly Val Ile Leu Ser Pro Gly Phe Pro Gly Ser Tyr Pro Asn Asn Leu  
 1985 1990 1995 2000  
 Asp Cys Thr Trp Arg Ile Ser Leu Pro Ile Gly Tyr Gly Ala His Ile  
 2005 2010 2015  
 Gln Phe Leu Asn Phe Ser Thr Glu Ala Asn His Asp Phe Leu Glu Ile  
 2020 2025 2030  
 Gln Asn Gly Pro Tyr His Thr Ser Pro Met Ile Gly Gln Phe Ser Gly  
 2035 2040 2045  
 Thr Asp Leu Pro Ala Ala Leu Leu Ser Thr Thr His Glu Thr Leu Ile  
 2050 2055 2060  
 His Phe Tyr Ser Asp His Ser Gln Asn Arg Gln Gly Phe Lys Leu Ala  
 2065 2070 2075 2080  
 Tyr Gln Ala Tyr Glu Leu Gln Asn Cys Pro Asp Pro Pro Phe Gln  
 2085 2090 2095  
 Asn Gly Tyr Met Ile Asn Ser Asp Tyr Ser Val Gly Gln Ser Val Ser  
 2100 2105 2110  
 Phe Glu Cys Tyr Pro Gly Tyr Ile Leu Ile Gly His Pro Val Leu Thr  
 2115 2120 2125  
 Cys Gln His Gly Ile Asn Arg Asn Trp Asn Tyr Pro Phe Pro Arg Cys  
 2130 2135 2140  
 Asp Ala Pro Cys Gly Tyr Asn Val Thr Ser Gln Asn Gly Thr Ile Tyr  
 2145 2150 2155 2160

Ser Pro Gly Phe Pro Asp Glu Tyr Pro Ile Leu Lys Asp Cys Ile Trp  
 2165 2170 2175  
 Leu Ile Thr Val Pro Pro Gly His Gly Val Tyr Ile Asn Phe Thr Leu  
 2180 2185 2190  
 Leu Gln Thr Glu Ala Val Asn Asp Tyr Ile Ala Val Trp Asp Gly Pro  
 2195 2200 2205  
 Asp Gln Asn Ser Pro Gln Leu Gly Val Phe Ser Gly Asn Thr Ala Leu  
 2210 2215 2220  
 Glu Thr Ala Tyr Ser Ser Thr Asn Gln Val Leu Leu Lys Phe His Ser  
 2225 2230 2235 2240  
 Asp Phe Ser Asn Gly Gly Phe Phe Val Leu Asn Phe His Ala Phe Gln  
 2245 2250 2255  
 Leu Lys Lys Cys Gln Pro Pro Pro Ala Val Pro Gln Ala Glu Met Leu  
 2260 2265 2270  
 Thr Glu Asp Asp Asp Phe Glu Ile Gly Asp Phe Val Lys Tyr Gln Cys  
 2275 2280 2285  
 His Pro Gly Tyr Thr Leu Val Gly Thr Asp Ile Leu Thr Cys Lys Leu  
 2290 2295 2300  
 Ser Ser Gln Leu Gln Phe Glu Gly Ser Leu Pro Thr Cys Glu Ala Gln  
 2305 2310 2315 2320  
 Cys Pro Ala Asn Glu Val Arg Thr Gly Ser Ser Gly Val Ile Leu Ser  
 2325 2330 2335  
 Pro Gly Tyr Pro Gly Asn Tyr Phe Asn Ser Gln Thr Cys Ser Trp Ser  
 2340 2345 2350  
 Ile Lys Val Glu Pro Asn Tyr Asn Ile Thr Ile Phe Val Asp Thr Phe  
 2355 2360 2365  
 Gln Ser Glu Lys Gln Phe Asp Ala Leu Glu Val Phe Asp Gly Ser Ser  
 2370 2375 2380  
 Gly Gln Ser Pro Leu Leu Val Val Leu Ser Gly Asn His Thr Glu Gln  
 2385 2390 2395 2400  
 Ser Asn Phe Thr Ser Arg Ser Asn Gln Leu Tyr Leu Arg Trp Ser Thr  
 2405 2410 2415  
 Asp His Ala Thr Ser Lys Lys Gly Phe Lys Ile Arg Tyr Ala Ala Pro  
 2420 2425 2430  
 Tyr Cys Ser Leu Thr His Pro Leu Lys Asn Gly Gly Ile Leu Asn Arg  
 2435 2440 2445  
 Thr Ala Gly Ala Val Gly Ser Lys Val His Tyr Phe Cys Lys Pro Gly  
 2450 2455 2460

Tyr Arg Met Val Gly His Ser Asn Ala Thr Cys Arg Arg Asn Pro Leu  
 2465                      2470                      2475                      2480

Gly Met Tyr Gln Trp Asp Ser Leu Thr Pro Leu Cys Gln Ala Val Ser  
                     2485                      2490                      2495

Cys Gly Ile Pro Glu Ser Pro Gly Asn Gly Ser Phe Thr Gly Asn Glu  
                     2500                      2505                      2510

Phe Thr Leu Asp Ser Lys Val Val Tyr Glu Cys His Glu Gly Phe Lys  
                     2515                      2520                      2525

Leu Glu Ser Ser Gln Gln Ala Thr Ala Val Cys Gln Glu Asp Gly Leu  
                     2530                      2535                      2540

Trp Ser Asn Lys Gly Lys Pro Pro Met Cys Lys Pro Val Ala Cys Pro  
 2545                      2550                      2555                      2560

Ser Ile Glu Ala Gln Leu Ser Glu His Val Ile Trp Arg Leu Val Ser  
                     2565                      2570                      2575

Gly Ser Leu Asn Glu Tyr Gly Ala Gln Val Leu Leu Ser Cys Ser Pro  
                     2580                      2585                      2590

Gly Tyr Tyr Leu Glu Gly Trp Arg Leu Leu Arg Cys Gln Ala Asn Gly  
                     2595                      2600                      2605

Thr Trp Asn Ile Gly Asp Glu Arg Pro Ser Cys Arg Ala Gly His Cys  
                     2610                      2615                      2620

Gly Ser Pro Asp Pro Ile Val Asn Gly His Ile Ser Gly Asp Gly Phe  
 2625                      2630                      2635                      2640

Ser Tyr Arg Asp Thr Val Val Tyr Gln Cys Asn Pro Gly Phe Arg Leu  
                     2645                      2650                      2655

Val Gly Thr Ser Val Arg Ile Cys Leu Gln Asp His Lys Trp Ser Gly  
                     2660                      2665                      2670

Gln Thr Pro Val Cys Val Pro Ile Thr Cys Gly His Pro Gly Asn Pro  
                     2675                      2680                      2685

Ala His Gly Phe Thr Asn Gly Ser Glu Phe Asn Leu Asn Asp Val Val  
                     2690                      2695                      2700

Asn Phe Thr Cys Asn Thr Gly Tyr Leu Leu Gln Gly Val Ser Arg Ala  
 2705                      2710                      2715                      2720

Gln Cys Arg Ser Asn Gly Gln Trp Ser Ser Pro Leu Pro Thr Cys Arg  
                     2725                      2730                      2735

Val Val Asn Cys Ser Asp Pro Gly Phe Val Glu Asn Ala Ile Arg His  
                     2740                      2745                      2750

Gly Gln Gln Asn Phe Pro Glu Ser Phe Glu Tyr Gly Met Ser Ile Leu  
                     2755                      2760                      2765

Tyr His Cys Lys Lys Gly Phe His Leu Leu Gly Ser Ser Ala Leu Thr  
 2770 2775 2780  
 Cys Met Ala Asn Gly Leu Trp Asp Arg Ser Leu Pro Lys Cys Leu Ala  
 2785 2790 2795 2800  
 Ile Ser Cys Gly His Pro Gly Val Pro Ala Asn Ala Val Leu Thr Gly  
 2805 2810 2815  
 Glu Leu Phe Thr Tyr Gly Ala Val Val His Tyr Ser Cys Arg Gly Ser  
 2820 2825 2830  
 Glu Ser Leu Ile Gly Asn Asp Thr Arg Val Cys Gln Glu Asp Ser His  
 2835 2840 2845  
 Trp Ser Gly Ala Leu Pro His Cys Thr Gly Asn Asn Pro Gly Phe Cys  
 2850 2855 2860  
 Gly Asp Pro Gly Thr Pro Ala His Gly Ser Arg Leu Gly Asp Asp Phe  
 2865 2870 2875 2880  
 Lys Thr Lys Ser Leu Leu Arg Phe Ser Cys Glu Met Gly His Gln Leu  
 2885 2890 2895  
 Arg Gly Ser Pro Glu Arg Thr Cys Leu Leu Asn Gly Ser Trp Ser Gly  
 2900 2905 2910  
 Leu Gln Pro Val Cys Glu Ala Val Leu Cys Pro Gln Pro Pro Val  
 2915 2920 2925  
 Gln Asn Gly Thr Val Glu Gly Ser Asp Phe Arg Trp Gly Ser Ser Ile  
 2930 2935 2940  
 Ser Tyr Ser Cys Met Asp Gly Tyr Gln Leu Ser His Ser Ala Ile Leu  
 2945 2950 2955 2960  
 Ser Cys Glu Gly Arg Gly Val Trp Lys Gly Glu Ile Pro Gln Cys Leu  
 2965 2970 2975  
 Pro Val Phe Cys Gly Asp Pro Gly Ile Pro Ala Glu Gly Arg Leu Ser  
 2980 2985 2990  
 Gly Lys Ser Phe Thr Tyr Lys Ser Glu Val Phe Phe Gln Cys Lys Ser  
 2995 3000 3005  
 Pro Phe Ile Leu Val Gly Ser Ser Arg Arg Val Cys Gln Ala Asp Gly  
 3010 3015 3020  
 Thr Trp Ser Gly Ile Gln Pro Thr Cys Ile Asp Pro Ala His Asn Thr  
 3025 3030 3035 3040  
 Cys Pro Asp Pro Gly Thr Pro His Phe Gly Ile Gln Asn Ser Ser Arg  
 3045 3050 3055  
 Gly Tyr Glu Val Gly Ser Thr Val Phe Phe Arg Cys Arg Lys Gly Tyr  
 3060 3065 3070

His Ile Gln Gly Ser Thr Thr Arg Thr Cys Leu Ala Asn Leu Thr Trp  
 3075 3080 3085  
 Ser Gly Ile Gln Thr Glu Cys Ile Pro His Ala Cys Arg Gln Pro Glu  
 3090 3095 3100  
 Thr Pro Ala His Ala Asp Val Arg Ala Ile Asp Leu Pro Thr Phe Gly  
 3105 3110 3115 3120  
 Tyr Thr Leu Val Tyr Thr Cys His Pro Gly Phe Phe Leu Ala Gly Gly  
 3125 3130 3135  
 Ser Glu His Arg Thr Cys Lys Ala Asp Met Lys Trp Thr Gly Lys Ser  
 3140 3145 3150  
 Pro Val Cys Lys Ser Lys Gly Val Arg Glu Val Asn Glu Thr Val Thr  
 3155 3160 3165  
 Lys Thr Pro Val Pro Ser Asp Val Phe Phe Val Asn Ser Leu Trp Lys  
 3170 3175 3180  
 Gly Tyr Tyr Glu Tyr Leu Gly Lys Arg Gln Pro Ala Thr Leu Thr Val  
 3185 3190 3195 3200  
 Asp Trp Phe Asn Ala Thr Ser Ser Lys Val Asn Ala Thr Phe Ser Glu  
 3205 3210 3215  
 Ala Ser Pro Val Glu Leu Lys Leu Thr Gly Ile Tyr Lys Lys Glu Glu  
 3220 3225 3230  
 Ala His Leu Leu Leu Lys Ala Phe Gln Ile Lys Gly Gln Ala Asp Ile  
 3235 3240 3245  
 Phe Val Ser Lys Phe Glu Asn Asp Asn Trp Gly Leu Asp Gly Tyr Val  
 3250 3255 3260  
 Ser Ser Gly Leu Glu Arg Gly Gly Phe Thr Phe Gln Gly Asp Ile His  
 3265 3270 3275 3280  
 Gly Lys Asp Phe Gly Lys Phe Lys Leu Glu Arg Gln Asp Pro Leu Asn  
 3285 3290 3295  
 Pro Asp Gln Asp Ser Ser Ser His Tyr His Gly Thr Ser Ser Gly Ser  
 3300 3305 3310  
 Val Ala Ala Ala Ile Leu Val Pro Phe Phe Ala Leu Ile Leu Ser Gly  
 3315 3320 3325  
 Phe Ala Phe Tyr Leu Tyr Lys His Arg Thr Arg Pro Lys Val Gln Tyr  
 3330 3335 3340  
 Asn Gly Tyr Ala Gly His Glu Asn Ser Asn Gly Gln Ala Ser Phe Glu  
 3345 3350 3355 3360  
 Asn Pro Met Tyr Asp Thr Asn Leu Lys Pro Thr Glu Ala Lys Ala Val  
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Arg Phe Asp Thr Thr Leu Asn Thr Val Cys Thr Val Val  
 3380 3385

<210> 48  
 <211> 1043  
 <212> PRT  
 <213> Homo sapiens

<400> 48  
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 Ser Val Leu Pro His Thr Ile Lys Ala Gly Leu Phe Gly Asn Phe Thr  
 35 40 45  
 Ala Gln Leu Arg Phe Ile Ser Asp Phe Ser Ile Ser Tyr Glu Gly Phe  
 50 55 60  
 Asn Ile Thr Phe Ser Glu Tyr Asp Leu Glu Pro Cys Asp Asp Pro Gly  
 65 70 75 80  
 Val Pro Ala Phe Ser Arg Arg Ile Gly Phe His Phe Gly Val Gly Asp  
 85 90 95  
 Ser Leu Thr Phe Ser Cys Phe Leu Gly Tyr Arg Leu Glu Gly Ala Thr  
 100 105 110  
 Lys Leu Thr Cys Leu Gly Gly Gly Arg Arg Val Trp Ser Ala Pro Leu  
 115 120 125  
 Pro Arg Cys Val Ala Glu Cys Gly Ala Ser Val Lys Gly Asn Glu Gly  
 130 135 140  
 Thr Leu Leu Ser Pro Asn Phe Pro Ser Asn Tyr Asp Asn Asn His Glu  
 145 150 155 160  
 Cys Ile Tyr Lys Ile Glu Thr Glu Ala Gly Lys Gly Ile His Leu Arg  
 165 170 175  
 Thr Arg Ser Phe Gln Leu Phe Glu Gly Asp Thr Leu Lys Val Tyr Asp  
 180 185 190  
 Gly Lys Asp Ser Ser Ser Arg Pro Leu Gly Thr Phe Thr Lys Asn Glu  
 195 200 205  
 Leu Leu Gly Leu Ile Leu Asn Ser Thr Ser Asn His Leu Trp Leu Glu  
 210 215 220  
 Phe Asn Thr Asn Gly Ser Asp Thr Asp Gln Gly Phe Gln Leu Thr Tyr  
 225 230 235 240  
 Thr Ser Phe Asp Leu Val Lys Cys Glu Asp Pro Gly Ile Pro Asn Tyr





545		550		555		560									
Ile	Glu	Ser	Ser	Gly	Asn	Ser	Leu	Phe	Leu	Ala	Phe	Arg	Ser	Asp	Ala
				565					570					575	
Ser	Val	Gly	Leu	Ser	Gly	Phe	Ala	Ile	Glu	Phe	Lys	Glu	Lys	Pro	Arg
			580					585					590		
Glu	Ala	Cys	Phe	Asp	Pro	Gly	Asn	Ile	Met	Asn	Gly	Thr	Arg	Val	Gly
		595					600					605			
Thr	Asp	Phe	Lys	Leu	Gly	Ser	Thr	Ile	Thr	Tyr	Gln	Cys	Asp	Ser	Gly
	610					615					620				
Tyr	Lys	Ile	Leu	Asp	Pro	Ser	Ser	Ile	Thr	Cys	Val	Ile	Gly	Ala	Asp
625					630					635					640
Gly	Lys	Pro	Ser	Trp	Asp	Gln	Val	Leu	Pro	Ser	Cys	Asn	Ala	Pro	Cys
				645					650						655
Gly	Gly	Gln	Tyr	Thr	Gly	Ser	Glu	Gly	Val	Val	Leu	Ser	Pro	Asn	Tyr
			660					665					670		
Pro	His	Asn	Tyr	Thr	Ala	Gly	Gln	Ile	Cys	Leu	Tyr	Ser	Ile	Thr	Val
		675					680					685			
Pro	Lys	Glu	Phe	Val	Val	Phe	Gly	Gln	Phe	Ala	Tyr	Phe	Gln	Thr	Ala
	690					695					700				
Leu	Asn	Asp	Leu	Ala	Glu	Leu	Phe	Asp	Gly	Thr	His	Ala	Gln	Ala	Arg
705					710					715					720
Leu	Leu	Ser	Ser	Leu	Ser	Gly	Ser	His	Ser	Gly	Glu	Thr	Leu	Pro	Leu
				725					730					735	
Ala	Thr	Ser	Asn	Gln	Ile	Leu	Leu	Arg	Phe	Ser	Ala	Lys	Ser	Gly	Ala
			740					745					750		
Ser	Ala	Arg	Gly	Phe	His	Phe	Val	Tyr	Gln	Ala	Val	Pro	Arg	Thr	Ser
		755					760					765			
Asp	Thr	Gln	Cys	Ser	Ser	Val	Pro	Glu	Pro	Arg	Tyr	Gly	Arg	Arg	Ile
	770					775					780				
Gly	Ser	Glu	Phe	Ser	Ala	Gly	Ser	Ile	Val	Arg	Phe	Glu	Cys	Asn	Pro
785					790					795					800
Gly	Tyr	Leu	Leu	Gln	Gly	Ser	Thr	Ala	Leu	His	Cys	Gln	Ser	Val	Pro
				805					810					815	
Asn	Ala	Leu	Ala	Gln	Trp	Asn	Asp	Thr	Ile	Pro	Ser	Cys	Val	Val	Pro
			820					825					830		
Cys	Ser	Gly	Asn	Phe	Thr	Gln	Arg	Arg	Gly	Thr	Ile	Leu	Ser	Pro	Gly
		835					840					845			
Tyr	Pro	Glu	Pro	Tyr	Gly	Asn	Asn	Leu	Asn	Cys	Ile	Trp	Lys	Ile	Ile

850                      855                      860  
 Val Thr Glu Gly Ser Gly Ile Gln Ile Gln Val Ile Ser Phe Ala Thr  
 865                      870                      875                      880  
 Glu Gln Asn Trp Asp Ser Leu Glu Ile His Asp Gly Gly Asp Val Thr  
                     885                      890                      895  
 Ala Pro Arg Leu Gly Ser Phe Ser Gly Thr Thr Val Pro Ala Leu Leu  
                     900                      905                      910  
 Asn Ser Thr Ser Asn Gln Leu Tyr Leu His Phe Gln Ser Asp Ile Ser  
                     915                      920                      925  
 Val Ala Ala Ala Gly Phe His Leu Glu Tyr Lys Thr Val Gly Leu Ala  
                     930                      935                      940  
 Ala Cys Gln Glu Pro Ala Leu Pro Ser Asn Ser Ile Lys Ile Gly Asp  
 945                      950                      955                      960  
 Arg Tyr Met Val Asn Asp Val Leu Ser Phe Gln Cys Glu Pro Gly Tyr  
                     965                      970                      975  
 Thr Leu Gln Gly Arg Ser His Ile Ser Cys Met Pro Gly Thr Val Arg  
                     980                      985                      990  
 Arg Trp Asn Tyr Pro Ser Pro Leu Cys Ile Ala Thr Cys Gly Gly Thr  
                     995                      1000                      1005  
 Leu Ser Thr Leu Gly Gly Val Ile Leu Ser Pro Gly Phe Pro Gly Ser  
                     1010                      1015                      1020  
 Tyr Pro Asn Asn Leu Asp Cys Thr Trp Arg Ile Ser Leu Pro Ile Gly  
 1025                      1030                      1035                      1040  
 Tyr Gly Lys

<210> 49  
 <211> 1048  
 <212> PRT  
 <213> Homo sapiens

<400> 49  
 Gly Lys Gly Val Gln Met Ile Phe His Thr Phe His Leu Glu Ser Ser  
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 His Asp Tyr Leu Leu Ile Thr Glu Asp Gly Ser Phe Ser Glu Pro Val  
                     20                    25                    30  
 Ala Arg Leu Thr Gly Ser Val Leu Pro His Thr Ile Lys Ala Gly Leu  
                     35                    40                    45  
 Phe Gly Asn Phe Thr Ala Gln Leu Arg Phe Ile Ser Asp Phe Ser Ile  
                     50                    55                    60

Ser Tyr Glu Gly Phe Asn Ile Thr Phe Ser Glu Tyr Asp Leu Glu Pro  
 65 70 75 80  
 Cys Asp Asp Pro Gly Val Pro Ala Phe Ser Arg Arg Ile Gly Phe His  
 85 90 95  
 Phe Gly Val Gly Asp Ser Leu Thr Phe Ser Cys Phe Leu Gly Tyr Arg  
 100 105 110  
 Leu Glu Gly Ala Thr Lys Leu Thr Cys Leu Gly Gly Gly Arg Arg Val  
 115 120 125  
 Trp Ser Ala Pro Leu Pro Arg Cys Val Ala Glu Cys Gly Ala Ser Val  
 130 135 140  
 Lys Gly Asn Glu Gly Thr Leu Leu Ser Pro Asn Phe Pro Ser Asn Tyr  
 145 150 155 160  
 Asp Asn Asn His Glu Cys Ile Tyr Lys Ile Glu Thr Glu Ala Gly Lys  
 165 170 175  
 Gly Ile His Leu Arg Thr Arg Ser Phe Gln Leu Phe Glu Gly Asp Thr  
 180 185 190  
 Leu Lys Val Tyr Asp Gly Lys Asp Ser Ser Ser Arg Pro Leu Gly Thr  
 195 200 205  
 Phe Thr Lys Asn Glu Leu Leu Gly Leu Ile Leu Asn Ser Thr Ser Asn  
 210 215 220  
 His Leu Trp Leu Glu Phe Asn Thr Asn Gly Ser Asp Thr Asp Gln Gly  
 225 230 235 240  
 Phe Gln Leu Thr Tyr Thr Ser Phe Asp Leu Val Lys Cys Glu Asp Pro  
 245 250 255  
 Gly Ile Pro Asn Tyr Gly Tyr Arg Ile Arg Asp Glu Gly His Phe Thr  
 260 265 270  
 Asp Thr Val Val Leu Tyr Ser Cys Asn Pro Gly Tyr Ala Met His Gly  
 275 280 285  
 Ser Asn Thr Leu Thr Cys Leu Ser Gly Asp Arg Arg Val Trp Asp Lys  
 290 295 300  
 Pro Leu Pro Ser Cys Ile Ala Glu Cys Gly Gly Gln Ile His Ala Ala  
 305 310 315 320  
 Thr Ser Gly Arg Ile Leu Ser Pro Gly Tyr Pro Ala Pro Tyr Asp Asn  
 325 330 335  
 Asn Leu His Cys Thr Trp Ile Ile Glu Ala Asp Pro Gly Lys Thr Ile  
 340 345 350  
 Ser Leu His Phe Ile Val Phe Asp Thr Glu Met Ala His Asp Ile Leu  
 355 360 365

Lys Val Trp Asp Gly Pro Val Asp Ser Asp Ile Leu Leu Lys Glu Trp  
 370 375 380  
 Ser Gly Ser Ala Leu Pro Glu Asp Ile His Ser Thr Phe Asn Ser Leu  
 385 390 395 400  
 Thr Leu Gln Phe Asp Ser Asp Phe Phe Ile Ser Lys Ser Gly Phe Ser  
 405 410 415  
 Ile Gln Phe Ser Thr Ser Ile Ala Ala Thr Cys Asn Asp Pro Gly Met  
 420 425 430  
 Pro Gln Asn Gly Thr Arg Tyr Gly Asp Ser Arg Glu Ala Gly Asp Thr  
 435 440 445  
 Val Thr Phe Gln Cys Asp Pro Gly Tyr Gln Leu Gln Gly Gln Ala Lys  
 450 455 460  
 Ile Thr Cys Val Gln Leu Asn Asn Arg Phe Phe Trp Gln Pro Asp Pro  
 465 470 475 480  
 Pro Thr Cys Ile Ala Ala Cys Gly Gly Asn Leu Thr Gly Pro Ala Gly  
 485 490 495  
 Val Ile Leu Ser Pro Asn Tyr Pro Gln Pro Tyr Pro Pro Gly Lys Glu  
 500 505 510  
 Cys Asp Trp Arg Val Lys Val Asn Pro Asp Phe Val Ile Ala Leu Ile  
 515 520 525  
 Phe Lys Ser Phe Asn Met Glu Pro Ser Tyr Asp Phe Leu His Ile Tyr  
 530 535 540  
 Glu Gly Glu Asp Ser Asn Ser Pro Leu Ile Gly Ser Tyr Gln Gly Ser  
 545 550 555 560  
 Gln Ala Pro Glu Arg Ile Glu Ser Ser Gly Asn Ser Leu Phe Leu Ala  
 565 570 575  
 Phe Arg Ser Asp Ala Ser Val Gly Leu Ser Gly Phe Ala Ile Glu Phe  
 580 585 590  
 Lys Glu Lys Pro Arg Glu Ala Cys Phe Asp Pro Gly Asn Ile Met Asn  
 595 600 605  
 Gly Thr Arg Val Gly Thr Asp Phe Lys Leu Gly Ser Thr Ile Thr Tyr  
 610 615 620  
 Gln Cys Asp Ser Gly Tyr Lys Ile Leu Asp Pro Ser Ser Ile Thr Cys  
 625 630 635 640  
 Val Ile Gly Ala Asp Gly Lys Pro Ser Trp Asp Gln Val Leu Pro Ser  
 645 650 655  
 Cys Asn Ala Pro Cys Gly Gly Gln Tyr Thr Gly Ser Glu Gly Val Val  
 660 665 670

Leu Ser Pro Asn Tyr Pro His Asn Tyr Thr Ala Gly Gln Ile Cys Leu  
 675 680 685  
 Tyr Ser Ile Thr Val Pro Lys Glu Phe Val Val Phe Gly Gln Phe Ala  
 690 695 700  
 Tyr Phe Gln Thr Ala Leu Asn Asp Leu Ala Glu Leu Phe Asp Gly Thr  
 705 710 715 720  
 His Ala Gln Ala Arg Leu Leu Ser Ser Leu Ser Gly Ser His Ser Gly  
 725 730 735  
 Glu Thr Leu Pro Leu Ala Thr Ser Asn Gln Ile Leu Leu Arg Phe Ser  
 740 745 750  
 Ala Lys Ser Gly Ala Ser Ala Arg Gly Phe His Phe Val Tyr Gln Ala  
 755 760 765  
 Val Pro Arg Thr Ser Asp Thr Gln Cys Ser Ser Val Pro Glu Pro Arg  
 770 775 780  
 Tyr Gly Arg Arg Ile Gly Ser Glu Phe Ser Ala Gly Ser Ile Val Arg  
 785 790 795 800  
 Phe Glu Cys Asn Pro Gly Tyr Leu Leu Gln Gly Ser Thr Ala Leu His  
 805 810 815  
 Cys Gln Ser Val Pro Asn Ala Leu Ala Gln Trp Asn Asp Thr Ile Pro  
 820 825 830  
 Ser Cys Val Val Pro Cys Ser Gly Asn Phe Thr Gln Arg Arg Gly Thr  
 835 840 845  
 Ile Leu Ser Pro Gly Tyr Pro Glu Pro Tyr Gly Asn Asn Leu Asn Cys  
 850 855 860  
 Ile Trp Lys Ile Ile Val Thr Glu Gly Ser Gly Ile Gln Ile Gln Val  
 865 870 875 880  
 Ile Ser Phe Ala Thr Glu Gln Asn Trp Asp Ser Leu Glu Ile His Asp  
 885 890 895  
 Gly Gly Asp Val Thr Ala Pro Arg Leu Gly Ser Phe Ser Gly Thr Thr  
 900 905 910  
 Val Pro Ala Leu Leu Asn Ser Thr Ser Asn Gln Leu Tyr Leu His Phe  
 915 920 925  
 Gln Ser Asp Ile Ser Val Ala Ala Ala Gly Phe His Leu Glu Tyr Lys  
 930 935 940  
 Thr Val Gly Leu Ala Ala Cys Gln Glu Pro Ala Leu Pro Ser Asn Ser  
 945 950 955 960  
 Ile Lys Ile Gly Asp Arg Tyr Met Val Asn Asp Val Leu Ser Phe Gln  
 965 970 975

Cys Glu Pro Gly Tyr Thr Leu Gln Gly Arg Ser His Ile Ser Cys Met  
                   980                                  985                                  990  
 Pro Gly Thr Val Arg Arg Trp Asn Tyr Pro Ser Pro Leu Cys Ile Ala  
                   995                                  1000                                  1005  
 Thr Cys Gly Gly Thr Leu Ser Thr Leu Gly Gly Val Ile Leu Ser Pro  
                   1010                                  1015                                  1020  
 Gly Phe Pro Gly Ser Tyr Pro Asn Asn Leu Asp Cys Thr Trp Arg Ile  
                   1025                                  1030                                  1035                                  1040  
 Ser Leu Pro Ile Gly Tyr Gly Lys  
                                   1045

<210> 50  
 <211> 124  
 <212> PRT  
 <213> Homo sapiens

<400> 50  
 His Glu Gly Ile Ser Asn Pro Thr Ile Lys Asp Asn Gly Thr Phe Ser  
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 Cys Ala Val Lys Asn Pro Pro Asp Val His His Asn Ile Pro Met Thr  
                   20                                  25                                  30  
 Glu Leu Thr Val Thr Glu Arg Gly Phe Gly Thr Met Leu Ser Ser Val  
                   35                                  40                                  45  
 Ala Leu Leu Ser Ile Leu Val Phe Val Pro Ser Ala Val Val Val Ala  
                   50                                  55                                  60  
 Leu Leu Leu Val Arg Met Gly Arg Lys Ala Ala Gly Leu Lys Lys Arg  
                   65                                  70                                  75                                  80  
 Ser Arg Ser Gly Tyr Lys Lys Ser Ser Ile Glu Val Ser Asp Asp Thr  
                                   85                                  90                                  95  
 Asp Gln Glu Glu Glu Glu Ala Cys Met Ala Arg Leu Cys Val Arg Cys  
                   100                                  105                                  110  
 Ala Glu Cys Leu Asp Ser Asp Tyr Glu Glu Thr Tyr  
                   115                                  120

<210> 51  
 <211> 219  
 <212> PRT  
 <213> Homo sapiens

<400> 51  
 Ile Val Val Tyr Thr Asp Lys Glu Val His Gly Ala Val Gly Ser Gln  
   1                                  5                                  10                                  15  
 Val Thr Leu Tyr Cys Ser Phe Trp Ser Ser Glu Trp Val Ser Asp Asp

20					25					30					
Leu	Ser	Phe	Thr	Trp	Arg	Tyr	Gln	Pro	Glu	Gly	Gly	Arg	Asp	Ala	Ile
		35					40					45			
Ser	Ile	Phe	His	Tyr	Ala	Lys	Gly	Gln	Pro	Tyr	Ile	Asp	Glu	Val	Gly
	50					55					60				
Thr	Phe	Lys	Glu	Arg	Ile	Gln	Trp	Val	Gly	Asp	Pro	His	Arg	Lys	Asp
	65					70					75				80
Gly	Ser	Ile	Val	Ile	His	Asn	Leu	Asp	Tyr	Gly	Asp	Asn	Gly	Thr	Phe
				85					90					95	
Thr	Cys	Asp	Val	Lys	Asn	Pro	Pro	Asp	Ile	Val	Gly	Lys	Thr	Ser	Gln
			100					105					110		
Val	Thr	Leu	Tyr	Val	Phe	Glu	Lys	Val	Pro	Thr	Arg	Tyr	Gly	Val	Val
		115					120					125			
Leu	Gly	Ala	Val	Ile	Gly	Gly	Val	Leu	Gly	Val	Val	Leu	Leu	Ala	Leu
	130					135					140				
Leu	Leu	Phe	Tyr	Leu	Ile	Arg	Tyr	Cys	Trp	Leu	Arg	Arg	Gln	Ala	Ala
	145					150					155				160
Leu	Gln	Arg	Arg	Leu	His	Ala	Met	Glu	Lys	Gly	Lys	Leu	His	Lys	Thr
				165					170					175	
Ala	Lys	Asp	Ala	Ser	Lys	Arg	Gly	Arg	Gln	Thr	Pro	Val	Leu	Tyr	Ala
			180					185					190		
Met	Leu	Asp	His	Ser	Arg	Ser	Thr	Lys	Ala	Ala	Ser	Glu	Lys	Lys	Thr
		195					200					205			
Lys	Gly	Leu	Gly	Glu	Ser	Arg	Lys	Asp	Lys	Lys					
	210					215									

<210> 52  
 <211> 251  
 <212> PRT  
 <213> Homo sapiens

<400> 52  
 Met Ala Pro Gly Ala Pro Ser Ser Ser Pro Ser Pro Ile Leu Ala Val  
 1 5 10 15  
 Leu Leu Phe Ser Ser Leu Val Leu Ser Pro Ala Gln Ala Ile Val Val  
 20 25 30  
 Tyr Thr Asp Arg Glu Val His Gly Ala Val Gly Ser Arg Val Thr Leu  
 35 40 45  
 His Cys Ser Phe Trp Ser Ser Glu Trp Val Ser Asp Asp Ile Ser Phe  
 50 55 60



Thr Trp Arg Tyr Gln Pro Glu Gly Gly Arg Asp Ala Ile Ser Ile Phe  
 65 70 75 80  
 His Tyr Ala Lys Gly Gln Pro Tyr Ile Asp Glu Val Gly Thr Phe Lys  
 85 90 95  
 Glu Arg Ile Gln Trp Val Gly Asp Pro Arg Trp Lys Asp Gly Ser Ile  
 100 105 110  
 Val Ile His Asn Leu Asp Tyr Ser Asp Asn Gly Thr Phe Thr Cys Asp  
 115 120 125  
 Val Lys Asn Pro Pro Asp Ile Val Gly Lys Thr Ser Gln Val Thr Leu  
 130 135 140  
 Tyr Val Phe Glu Lys Val Pro Thr Arg Tyr Gly Val Val Leu Gly Ala  
 145 150 155 160  
 Val Ile Gly Gly Val Leu Gly Val Val Leu Leu Leu Leu Leu Phe  
 165 170 175  
 Tyr Val Val Arg Tyr Cys Trp Leu Arg Arg Gln Ala Ala Leu Gln Arg  
 180 185 190  
 Arg Leu Ser Ala Met Glu Lys Gly Lys Leu His Lys Pro Gly Lys Asp  
 195 200 205  
 Ala Ser Lys Arg Gly Arg Gln Thr Pro Val Leu Tyr Ala Gln Cys Trp  
 210 215 220  
 Thr Thr Ala Glu Ala Pro Lys Leu Ser Val Arg Arg Arg Pro Arg Gly  
 225 230 235 240  
 Trp Gly Ser Leu Ala Arg Ile Arg Asn Ser Gly  
 245 250

<210> 53  
 <211> 258  
 <212> PRT  
 <213> Homo sapiens

<400> 53  
 Met Leu Arg Ala Pro Ala Pro Ala Pro Ala Met Ala Pro Gly Ala Pro  
 1 5 10 15  
 Ser Ser Ser Pro Ser Pro Ile Leu Ala Val Leu Leu Phe Ser Ser Leu  
 20 25 30  
 Val Leu Ser Pro Ala Gln Ala Ile Val Val Tyr Thr Asp Arg Glu Val  
 35 40 45  
 His Gly Ala Val Gly Ser Arg Val Thr Leu His Cys Ser Phe Trp Ser  
 50 55 60  
 Ser Glu Trp Val Ser Asp Asp Ile Ser Phe Thr Trp Arg Tyr Gln Pro  
 65 70 75 80

Glu Gly Gly Arg Asp Ala Ile Ser Ile Phe His Tyr Ala Lys Gly Gln  
                     85                    90                    95  
 Pro Tyr Ile Asp Glu Val Gly Thr Phe Lys Glu Arg Ile Gln Trp Val  
                     100                    105                    110  
 Gly Asp Pro Arg Trp Lys Asp Gly Ser Ile Val Ile His Asn Leu Asp  
                     115                    120                    125  
 Tyr Ser Asp Asn Gly Thr Phe Thr Cys Asp Val Lys Asn Pro Pro Asp  
                     130                    135                    140  
 Ile Val Gly Lys Thr Ser Gln Val Thr Leu Tyr Val Phe Glu Lys Val  
                     145                    150                    155                    160  
 Pro Thr Arg Tyr Gly Val Val Leu Gly Ala Val Ile Gly Gly Val Leu  
                     165                    170                    175  
 Gly Val Val Leu Leu Leu Leu Leu Leu Phe Tyr Val Val Arg Tyr Cys  
                     180                    185                    190  
 Trp Leu Arg Arg Gln Ala Ala Leu Gln Arg Arg Leu Ser Ala Met Glu  
                     195                    200                    205  
 Lys Gly Lys Leu His Lys Pro Gly Lys Asp Ala Ser Lys Arg Gly Arg  
                     210                    215                    220  
 Gln Thr Pro Val Leu Tyr Ala Met Leu Asp His Ser Arg Ser Thr Lys  
                     225                    230                    235                    240  
 Ala Val Ser Glu Lys Lys Ala Lys Gly Leu Gly Glu Ser Arg Lys Asp  
                     245                    250                    255

Lys Lys

<210> 54  
 <211> 248  
 <212> PRT  
 <213> Homo sapiens

<400> 54  
 Met Ala Pro Gly Ala Pro Ser Ser Ser Pro Ser Pro Ile Leu Ala Val  
   1                    5                    10                    15  
 Leu Leu Phe Ser Ser Leu Val Leu Ser Pro Ala Gln Ala Ile Val Val  
                     20                    25                    30  
 Tyr Thr Asp Arg Glu Val His Gly Ala Val Gly Ser Arg Val Thr Leu  
                     35                    40                    45  
 His Cys Ser Phe Trp Ser Ser Glu Trp Val Ser Asp Asp Ile Ser Phe  
                     50                    55                    60  
 Thr Trp Arg Tyr Gln Pro Glu Gly Gly Arg Asp Ala Ile Ser Ile Phe

65		70		75		80
His Tyr Ala Lys Gly Gln Pro Tyr Ile Asp Glu Val Gly Thr Phe Lys						
	85		90			95
Glu Arg Ile Gln Trp Val Gly Asp Pro Arg Trp Lys Asp Gly Ser Ile						
	100		105			110
Val Ile His Asn Leu Asp Tyr Ser Asp Asn Gly Thr Phe Thr Cys Asp						
	115		120			125
Val Lys Asn Pro Pro Asp Ile Val Gly Lys Thr Ser Gln Val Thr Leu						
	130		135			140
Tyr Val Phe Glu Lys Val Pro Thr Arg Tyr Gly Val Val Leu Gly Ala						
	145		150		155	160
Val Ile Gly Gly Val Leu Gly Val Val Leu Leu Leu Leu Leu Phe						
	165		170			175
Tyr Val Val Arg Tyr Cys Trp Leu Arg Arg Gln Ala Ala Leu Gln Arg						
	180		185			190
Arg Leu Ser Ala Met Glu Lys Gly Lys Leu His Lys Pro Gly Lys Asp						
	195		200			205
Ala Ser Lys Arg Gly Arg Gln Thr Pro Val Leu Tyr Ala Met Leu Asp						
	210		215			220
His Ser Arg Ser Thr Lys Ala Val Ser Glu Lys Lys Ala Lys Gly Leu						
	225		230		235	240
Gly Glu Ser Arg Lys Asp Lys Lys						
	245					

<210> 55  
 <211> 2327  
 <212> PRT  
 <213> Xenopus laevis

<400> 55
Met Asn Thr Leu Leu Trp Thr Ile Leu Leu Pro Leu Leu Phe Ser Phe
1 5 10 15
Cys Val Cys Gln Gln Pro Glu His Gln Asp Leu Glu Met Ser Val Gln
20 25 30
Tyr Tyr Asp Asp Asn Val Ile Asp Leu Leu Glu Ala Leu Asn Val Thr
35 40 45
Arg Ser Val Lys Gly Val Thr Lys Ala Lys Gly Ser Asp Pro Ala Ser
50 55 60
Pro Ala Trp Lys Phe Arg Gln Arg Val Pro His Leu Thr Leu Pro Arg
65 70 75 80

Asp Tyr Ser Val Tyr Leu Leu Ser Thr Thr Gln Glu Ser Leu Gly Leu  
                             85                            90                            95

His Phe Val Ala Lys Gln Ala Lys Asn Asn Arg Gly Thr Leu Val Ala  
                             100                            105                            110

Phe Leu Ser Pro Ala Ala Thr Lys Ile Asp Gly Arg Pro Leu Leu Arg  
                             115                            120                            125

Leu Ile Ser Asp Thr His Thr Asp Gln Leu Tyr Phe Glu Tyr Arg Thr  
                             130                            135                            140

Ala Gln Thr Met Glu Pro Ala Ser Leu His Phe Pro Gly Ser Ser Pro  
 145                            150                            155                            160

Phe Ser Gly Ser Gln Trp Ala Arg Val Ala Leu Asn Val Asn Thr His  
                             165                            170                            175

Lys Val Thr Leu Phe Leu Asp Cys Glu Glu Pro Val Val Phe Gly Lys  
                             180                            185                            190

Glu Gly Ala Glu Glu Met Leu Ser Leu Ile Leu Pro Leu Asp Leu Glu  
                             195                            200                            205

Ile Thr Phe Ala Ser Thr Pro Ser Asp Lys Glu Ser Lys Phe Leu Gly  
                             210                            215                            220

Tyr Trp Gln Thr Ala Glu Ile Ser Pro Thr Gly Phe Thr Arg Arg Pro  
 225                            230                            235                            240

Trp His Cys Glu Asn Arg Ser Asp Ser Leu Pro Leu Pro Tyr Ser Leu  
                             245                            250                            255

Ser Gly Glu Arg Gln Met Glu Asp Glu Glu Ile Gln Arg Glu Pro Arg  
                             260                            265                            270

Ala Pro Asp Leu Ser Asp Thr Asp His Tyr Gln Gln Gln Gln Ser Glu  
                             275                            280                            285

Val Pro Ala Gln Leu Leu Ala Lys Asp Asp Arg Leu Gln Arg Leu Glu  
                             290                            295                            300

Glu Ala Val Lys Gly Leu Thr Asn Met Ile Asp Met Ile Lys Ser Gln  
 305                            310                            315                            320

Asn Ala Asp Leu Gln Ala Arg Val Ile Ala Leu Glu Ser Cys Glu Cys  
                             325                            330                            335

Arg Arg Ser Thr Cys Val Trp Glu Asp Lys Glu Tyr Gln Asp Ser Glu  
                             340                            345                            350

Thr Trp Lys Lys Asp Ala Cys Asn Ile Cys Val Cys Val Gly Gly Ser  
                             355                            360                            365

Val Thr Cys Ser Val Arg Lys Asp Trp Pro Gln Cys Leu Gly Cys Phe  
                             370                            375                            380

His Glu Gly Arg Asn Tyr Asn Asn Lys Asp Ile Phe Ser Val Gly Pro  
 385 390 395 400  
 Cys Met Ser Cys Ile Cys Gln Ser Gly Glu Val Ser Cys Thr Pro Lys  
 405 410 415  
 Leu Cys Pro Pro Val Thr Cys Ser Asp Pro Val Thr Leu Pro Asn Glu  
 420 425 430  
 Cys Cys Pro Leu Cys Ala Thr Gly Cys Ser Asp Gly His Lys Glu Gly  
 435 440 445  
 Asp Thr Trp Arg Lys Asp Thr Cys Thr Thr Cys Thr Cys Gln Asn Gly  
 450 455 460  
 Thr Ile Ser Cys Glu Arg Glu Gln Cys Pro Glu Leu Thr Cys Leu Lys  
 465 470 475 480  
 Arg His Thr Pro Pro Gly Gln Cys Cys Ala Lys Cys Gln Gln Gly Cys  
 485 490 495  
 Glu Tyr Glu Gly Leu Ile Tyr Arg Asn Gly Asp Tyr Phe Leu Ser Gln  
 500 505 510  
 Ser Asn Pro Cys Val Asn Cys Ser Cys Leu Asn Asn Leu Val Arg Cys  
 515 520 525  
 Leu Pro Val Gln Cys Pro Leu Pro Ala Cys Thr Asn Pro Val Pro Ile  
 530 535 540  
 Pro Gly Gln Cys Cys Pro Ser Cys Pro Val Cys Glu Leu Asp Gly His  
 545 550 555 560  
 Pro Leu Ile Pro Gly Gln Asn Val Thr Thr Lys Asp Gly Cys Arg Leu  
 565 570 575  
 Cys Ser Cys Gln Asp Gly Lys Val Gln Cys Thr Glu Ser Val Gln Cys  
 580 585 590  
 Pro His Ile Cys Thr His Gly Val Arg Ser Asn Ser Cys Cys Leu Asp  
 595 600 605  
 Cys Ser Ala Cys Glu Met His Gly Asp Ile Ile Pro Asn Gly Leu Thr  
 610 615 620  
 Phe Gln Gly Asn Met Asp Pro Cys Glu Ser Cys Thr Cys Gln Asp Gly  
 625 630 635 640  
 Asn Val His Cys Val Arg Val Ser Cys Pro Glu Leu Ser Cys Val Leu  
 645 650 655  
 His Glu Lys Ile Pro Gly Glu Cys Cys Ser Gln Cys Gln Ser Cys Met  
 660 665 670  
 Asp Gly Thr Val Lys Arg Lys His Gly Glu Glu Trp Lys Pro Gln Gly  
 675 680 685

Asp Pro Cys Gln Ser Cys Arg Cys Leu Glu Gly Arg Val Gln Cys Arg  
 690 695 700  
 Lys Arg His Cys Ala Ala Leu Cys Arg Asn Pro Leu Pro Pro Arg Pro  
 705 710 715 720  
 Gly Thr Cys Cys Pro Met Cys Asp Gly Cys Leu Tyr Asn Gly Arg Ser  
 725 730 735  
 Tyr Leu Asn Gly Gln Pro Val Arg Ser Thr Asp Gln Cys Asn Arg Cys  
 740 745 750  
 Phe Cys Glu Asn Gly Asn Val Gln Cys Glu Pro Ile Ala Cys Pro Gln  
 755 760 765  
 Ala Pro Cys Arg Asn Pro Val Arg Arg Thr Gly Glu Cys Cys Pro Arg  
 770 775 780  
 Cys Glu Gly Cys Glu Tyr Asp Ser Arg His Phe Ala Glu Gly Val Val  
 785 790 795 800  
 Phe Thr Thr Ala His Asp Pro Cys Leu Gln Cys Thr Cys Leu Ser Gly  
 805 810 815  
 Glu Val Ser Cys Glu His Leu Asp Arg Lys Cys Pro Pro Ser Gln Cys  
 820 825 830  
 Ser His Pro Gly Lys Ala Ala Gly Gln Cys Cys Pro Ser Cys Asp Val  
 835 840 845  
 Cys Asp Phe Glu Gly Ile Leu Tyr Thr Asp Arg Gln Thr Phe Gln Pro  
 850 855 860  
 Pro Gly His Gly Pro Cys Leu Lys Cys Phe Cys Thr Ile Gly Asn Val  
 865 870 875 880  
 Arg Cys Val Glu Glu Thr Cys Pro Pro Ala Pro Cys Pro Asn Pro Val  
 885 890 895  
 Arg Asp Pro Glu Gln Cys Cys Pro Val Cys Lys Val Cys Val Gln Asp  
 900 905 910  
 Gly Val Glu Phe Leu Glu Gly Ile Glu Trp Glu Leu Asp Gly Asn Pro  
 915 920 925  
 Cys Ser Ser Cys Thr Cys Arg Asn Gly Asp Thr Val Cys Gly Val Ser  
 930 935 940  
 Glu Cys Pro Pro Val Ser Cys Leu His Pro Thr Arg Arg Glu Gly Glu  
 945 950 955 960  
 Cys Cys Pro Val Cys Asp Ser Cys Ser Tyr Asn Gln Arg Leu Tyr Ser  
 965 970 975  
 Asn Glu Gln Ile Phe Thr Asp Pro Asp Asn Pro Cys Gln Asp Cys Gln  
 980 985 990

Cys Lys Asp Gly Thr Val Gln Cys Ser Ser Ile Val Cys Pro Pro Val  
 995 1000 1005  
 Leu Cys Thr Ile Pro Glu Arg Thr Pro Gly Gln Cys Cys Ala Lys Cys  
 1010 1015 1020  
 Pro Asp Cys Arg Tyr Gln Asp Gln Ile Phe Leu Glu Gly Glu Gln Phe  
 1025 1030 1035 1040  
 Ser Asn Pro Leu Asn Gln Cys Gln Glu Cys Trp Cys Arg Asp Gly His  
 1045 1050 1055  
 Val Thr Cys Thr Asp Arg Gly Cys Thr Gly Ala Leu Cys Ser Tyr Pro  
 1060 1065 1070  
 Leu Pro Gly Thr Cys Cys Gln Asn Asn Cys Asn Gly Cys Asn Tyr Ala  
 1075 1080 1085  
 Gly Lys Glu Tyr Pro Asn Gly Ala Asp Phe Pro His Pro Thr Asp Lys  
 1090 1095 1100  
 Cys Arg Gln Cys His Cys Ile Asn Gly Asn Val Gln Cys Leu Ala Gln  
 1105 1110 1115 1120  
 Arg Cys Pro Pro Leu Leu Cys Ala Glu Pro Phe Pro Val Pro Gly Glu  
 1125 1130 1135  
 Cys Cys Pro Gln Cys Pro Val Pro Pro Ala Asp Cys Pro Tyr Ser Gly  
 1140 1145 1150  
 Val Thr Tyr Arg His Met Gln Arg Phe Tyr Asp Pro Ser Asp Lys Cys  
 1155 1160 1165  
 Arg Asp Cys Ile Cys Asn Asn Gly Thr Val Thr Cys Gln Arg Lys Pro  
 1170 1175 1180  
 Cys Ala Pro Thr Pro Cys Leu His Pro Leu Gln Gly Asp Cys Cys Arg  
 1185 1190 1195 1200  
 Ser Cys Asp Gly Cys Leu Met Ser Gly Lys Glu Leu Ala Asn Gly Glu  
 1205 1210 1215  
 Gln Phe Pro Gln Pro Ser Asp Pro Cys Ser Val Cys Val Cys Trp Glu  
 1220 1225 1230  
 Gly Ser Val Thr Cys Gln Pro Lys Thr Cys Pro Val Leu Asn Cys Pro  
 1235 1240 1245  
 Phe Pro Ala Pro Gly Gln Cys Cys Lys Glu Cys Gln Asp Cys Gln Tyr  
 1250 1255 1260  
 Phe Gly Glu Val Tyr Leu Asn Gly Gln Glu Phe Ser Ala Pro Glu Asp  
 1265 1270 1275 1280  
 Ser Cys Ser Arg Cys Val Cys Ala Asp Gly Phe Val Thr Cys Ser Lys  
 1285 1290 1295

Lys Pro Cys Tyr Lys Ala Gly Cys Thr His Pro Ser Thr Pro Pro Gly  
 1300 1305 1310  
 Lys Cys Cys Pro Val Cys Asp Gly Cys Ser Tyr Asn Gly Asp Ala Leu  
 1315 1320 1325  
 Ile Asn Ser Gln Ser Val Pro Asp Pro Ser Asn Pro Leu Cys Ser Glu  
 1330 1335 1340  
 Cys Thr Cys Arg Ala Gly Ser Val Gln Cys Val Arg Lys Leu Cys Gly  
 1345 1350 1355 1360  
 Pro Thr Ser Cys Pro His Pro Val Thr Gly Pro Cys Asp Cys Pro Ile  
 1365 1370 1375  
 Cys Gln Gly Cys His Phe Gln Gly His Asn Tyr Ile Asp Gly Glu Val  
 1380 1385 1390  
 Phe Thr Ser Ala Gln Ser Gln Cys Glu Gln Cys Arg Cys Met Arg Gly  
 1395 1400 1405  
 His Val Thr Cys Gly Pro Arg Pro Cys Asp Gln Val Thr Cys Pro His  
 1410 1415 1420  
 Pro Ala Glu Asp Pro Cys Met Cys Pro Val Cys Asp Gly Cys Asn Tyr  
 1425 1430 1435 1440  
 Ser Gly Arg Asp Cys Thr Asn Gly Glu Ser Phe Pro Asp Pro Glu Asp  
 1445 1450 1455  
 Glu Cys Ser His Cys Thr Cys Arg Asn Gly Glu Val Ala Cys Ile Ser  
 1460 1465 1470  
 Val Pro Cys Pro Arg Val Ser Cys Met Tyr Pro Ile Thr Pro Arg Gly  
 1475 1480 1485  
 Glu Cys Cys Pro Arg Cys Thr Gly Ile Cys Lys His Asn Gly Arg Val  
 1490 1495 1500  
 Tyr Gln Ser Gly Asp Thr Phe His Pro Pro Gly Asp Leu Cys Thr Lys  
 1505 1510 1515 1520  
 Cys Ser Cys Gln Asn Glu Met Val Asn Cys Gln Arg Val Arg Cys Ser  
 1525 1530 1535  
 Gln Glu Cys Ser His Pro Val Leu Ser Pro Ala Ser Ser Cys Cys Pro  
 1540 1545 1550  
 Val Cys Asp Arg Cys Phe Tyr Glu Asn Arg Glu Tyr Ala Asn His Glu  
 1555 1560 1565  
 Thr Phe Thr Ser Thr Ser Asp Pro Cys Gln Arg Cys Val Cys Leu Asp  
 1570 1575 1580  
 Gly Ser Val Thr Cys Thr His Val Val Cys Pro Tyr Val Ser Cys Ala  
 1585 1590 1595 1600



Asn Pro Ile Thr Lys Pro Gly Gln Cys Cys Arg Glu Cys Pro Val Cys  
 1605 1610 1615  
 Arg Tyr Gln Gly Lys Glu Phe Ser Glu Gly Ala His Trp Val Pro His  
 1620 1625 1630  
 Thr Asp Pro Cys Leu Lys Cys Thr Cys Ser Asn Gly His Val Asp Cys  
 1635 1640 1645  
 Glu Pro Pro Gln Cys Pro Pro Leu Pro Cys Thr Gln Gln Val Thr Asp  
 1650 1655 1660  
 Pro Gly Thr Cys Cys Pro Arg Cys Arg Gly Cys Val Tyr Asn Gly Arg  
 1665 1670 1675 1680  
 Glu Tyr Arg Asp Asn Ser Asn Trp Leu Ser Ser Ser Asp His Cys Met  
 1685 1690 1695  
 Ser Cys Met Cys Val Asp Gly Val Thr Thr Cys Ser Lys Leu Gln Cys  
 1700 1705 1710  
 Ile Thr Ser Cys Thr Asn Gln Ile Thr Ile Pro Gly Glu Cys Cys Pro  
 1715 1720 1725  
 Val Cys Ala Asp Cys Ile Ser Asn Ser Lys Val Tyr Leu Pro Gly Asp  
 1730 1735 1740  
 Ser Tyr Asn Pro Ser Lys Asp Pro Cys Glu Ile Cys Thr Cys Glu Ser  
 1745 1750 1755 1760  
 Leu Pro Asn Gly Gln Gln Tyr Arg His Cys Thr Lys Lys Gln Cys Pro  
 1765 1770 1775  
 Ser Leu Leu Asp Cys Pro Arg Ser Tyr Ile Leu Pro Pro Ala Glu Gly  
 1780 1785 1790  
 Gln Cys Cys Ser Ser Cys Ala Gln Ala Leu Ser Asn Cys Thr Asn Thr  
 1795 1800 1805  
 Leu Val Gly Asn Glu Ile Gln Ala Thr Asp Asp Pro Cys Tyr Thr Cys  
 1810 1815 1820  
 His Cys Lys Asp Leu Thr Trp Val Cys Val His Gln Pro Cys Pro Ala  
 1825 1830 1835 1840  
 Leu Ser Cys Pro Arg Ser Glu Gln Phe Thr His Ser Gly Ser Cys Cys  
 1845 1850 1855  
 Pro Val Cys Asn Glu Cys Val Val Glu Ile Glu Gly Arg Arg Val Pro  
 1860 1865 1870  
 Asp Gly Glu Thr Trp Thr Asp Arg Gln Asp Pro Cys Val Thr Cys Thr  
 1875 1880 1885  
 Cys Thr Leu Gly His Val Glu Cys Gln Ile Glu Glu Cys Gln Pro Val  
 1890 1895 1900

Gln Cys Gln Glu Gly Glu Arg Lys Val Lys Arg Pro Gly Thr Cys Cys  
 1905 1910 1915 1920  
 His Glu Cys Gln Ala Ser Ala Val Ser Cys Trp Tyr Gln Gly Gln Arg  
 1925 1930 1935  
 Phe Leu Ser Asn Glu His Trp Gln Val Asp Glu Cys Thr Ala Cys Thr  
 1940 1945 1950  
 Cys Val Ser Gly Glu Val His Cys His Ser Glu Arg Cys Pro Gln Val  
 1955 1960 1965  
 Ser Cys Thr Ala Glu Glu Thr Pro Ala Leu Ile Pro Gly Met Cys Cys  
 1970 1975 1980  
 Pro His Cys Ile Pro Arg Pro Ala Thr Cys Ile Ala Phe Gly Asp Pro  
 1985 1990 1995 2000  
 His Tyr Arg Thr Phe Asp Gly Lys Met Tyr His Phe Gln Gly Ser Cys  
 2005 2010 2015  
 Thr Tyr Val Leu Ser Glu Asp Cys Glu Gly Gly Asp Phe Ser Ile His  
 2020 2025 2030  
 Val Thr Asn Asp Asp Arg Gly Leu Arg Gly Val Ser Trp Thr Lys Glu  
 2035 2040 2045  
 Val Thr Val Leu Ile Gly Asp Ala Val Val Gln Leu Leu Gln Asp Trp  
 2050 2055 2060  
 Val Val Met Val Asp Tyr Gln Thr Val Glu Leu Pro Phe Leu Lys Glu  
 2065 2070 2075 2080  
 Pro Tyr Ile Tyr Ile Glu Arg Lys Thr Asn Thr Ile Leu Leu Asn Ser  
 2085 2090 2095  
 Asn Ile Gly Val Lys Val Gln Trp Asn Gly Arg Ser His Leu Glu Val  
 2100 2105 2110  
 Ser Val Pro Gly Thr Tyr Arg Asp His Leu Cys Gly Leu Cys Gly Asn  
 2115 2120 2125  
 Phe Asn Asn Tyr Pro Gln Asp Asp Leu Arg Asp Arg Arg Gly Gln Ile  
 2130 2135 2140  
 Leu Met Ser Glu Ala Ala Phe Gly Asn Ser Trp Arg Val Gln Ser Ser  
 2145 2150 2155 2160  
 Asn Asp Ser Ser Ser Ser Cys Trp Asp Gly Gln Asp Val Asp Pro Cys  
 2165 2170 2175  
 Lys Gln Ala Gly Tyr Arg Ala Arg Lys Glu Ala Asn Gly Arg Cys Lys  
 2180 2185 2190  
 Leu Leu Lys Ser Ser Val Phe Glu Pro Cys His Arg Val Val Pro Pro  
 2195 2200 2205

Glu Met Phe Phe Ala Ser Cys Val Tyr Asp Leu Cys Ala Cys Gly Ala  
 2210 2215 2220  
 Gly Asp Glu Cys Leu Cys Asp Val Leu Glu Ala Tyr Ala Ser Glu Cys  
 2225 2230 2235 2240  
 Arg Glu Ala Gly Val Ile Leu Gln Trp Arg Ser Pro Ala Leu Cys Ala  
 2245 2250 2255  
 Val Gly Cys Pro His Asp Arg Gly Tyr Val Phe Asp Glu Cys Gly Pro  
 2260 2265 2270  
 Pro Cys Pro Lys Thr Cys Phe Asn Lys Asp Val Pro Leu Gly Val Leu  
 2275 2280 2285  
 Glu Ser His Cys Phe Lys Pro Cys Val Pro Gly Cys Gln Cys Pro Ala  
 2290 2295 2300  
 Gly Leu Val Glu His Glu Ser His Cys Ile Pro Pro Glu Ser Cys Pro  
 2305 2310 2315 2320  
 Lys Ile Ile His Gly Asn Leu  
 2325

<210> 56  
 <211> 751  
 <212> PRT  
 <213> *Drosophila melanogaster*

<400> 56  
 Met Cys Cys Gln Ser Ser Gly Gln Trp Lys Phe Pro Ala Gln Gln Pro  
 1 5 10 15  
 Arg Lys Ser Leu Ala Ser Arg Arg Arg His Thr Gly Phe Arg Pro Ser  
 20 25 30  
 Thr Gln Leu Leu Ile Leu Ile Ala Val Leu Leu Ala Leu Leu Gln Gly  
 35 40 45  
 Arg Thr Val Asp Ala Gly Ala Gly Asp Ser Leu Ser Gly Val Arg Gln  
 50 55 60  
 Ser Cys Ser Asn Glu Gly Glu Glu Val Gln Leu Lys Asn Gln Pro Gln  
 65 70 75 80  
 Ile Phe Thr Cys Phe Lys Cys Glu Cys Gln Asn Gly Phe Val Asn Cys  
 85 90 95  
 Arg Asp Thr Cys Pro Pro Val Asn Asp Cys Tyr Ile Leu Asp Lys Ser  
 100 105 110  
 Asn Gly Thr Cys Cys Arg Arg Cys Lys Gly Cys Ser Phe Arg Gly Met  
 115 120 125  
 Ser Tyr Glu Ser Gly Ser Glu Trp Asn Asp Pro Glu Asp Pro Cys Lys  
 130 135 140

Thr	Tyr	Lys	Cys	Val	Ala	Thr	Val	Val	Thr	Glu	Thr	Ile	Gln	Lys	Cys	
145					150					155					160	
Tyr	Ser	Gln	Cys	Asp	Asn	Asn	Gln	Leu	Gln	Pro	Pro	Arg	Pro	Gly	Glu	
				165					170					175		
Cys	Cys	Pro	Thr	Cys	Gln	Gly	Cys	Lys	Ile	Asn	Gly	Gln	Thr	Val	Ala	
			180					185					190			
Glu	Gly	His	Glu	Val	Asp	Ala	Ser	Ile	Asp	Asp	Arg	Cys	Leu	Val	Cys	
		195					200					205				
Gln	Cys	Arg	Gly	Thr	Gln	Leu	Thr	Cys	Ser	Lys	Lys	Thr	Cys	Pro	Val	
	210					215					220					
Leu	Pro	Cys	Pro	Met	Ser	Lys	Gln	Ile	Lys	Arg	Pro	Asp	Glu	Cys	Cys	
225					230					235					240	
Pro	Arg	Cys	Pro	Gln	Asn	His	Ser	Phe	Leu	Pro	Val	Pro	Gly	Lys	Cys	
				245					250					255		
Leu	Phe	Asn	Lys	Ser	Val	Tyr	Pro	Glu	Lys	Thr	Gln	Phe	Met	Pro	Asp	
			260					265					270			
Arg	Cys	Thr	Asn	Cys	Thr	Cys	Leu	Asn	Gly	Thr	Ser	Val	Cys	Gln	Arg	
		275					280					285				
Pro	Thr	Cys	Pro	Ile	Leu	Glu	Cys	Ala	Pro	Glu	Phe	Gln	Glu	Pro	Asp	
	290					295					300					
Gly	Cys	Cys	Pro	Arg	Cys	Ala	Val	Ala	Glu	Val	Arg	Ser	Glu	Cys	Ser	
305					310					315					320	
Leu	Asp	Gly	Ile	Val	Tyr	Gln	Asn	Asn	Glu	Thr	Trp	Asp	Met	Gly	Pro	
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Cys	Arg	Ser	Cys	Arg	Cys	Asn	Gly	Gly	Thr	Ile	Arg	Cys	Ala	Gln	Met	
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Arg	Cys	Pro	Ala	Val	Lys	Cys	Arg	Ala	Asn	Glu	Glu	Leu	Lys	Gln	Pro	
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Pro	Gly	Glu	Cys	Cys	Gln	Arg	Cys	Val	Glu	Thr	Ala	Gly	Thr	Cys	Thr	
	370					375					380					
Val	Phe	Gly	Asp	Pro	His	Phe	Arg	Thr	Phe	Asp	Gly	Lys	Phe	Phe	Ser	
385					390					395					400	
Phe	Gln	Gly	Ser	Cys	Lys	Tyr	Leu	Leu	Ala	Ser	Asp	Cys	Met	Gly	Lys	
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Thr	Phe	His	Ile	Arg	Leu	Thr	Asn	Glu	Gly	Arg	Gly	Thr	Arg	Arg	Ser	
			420					425					430			
Ser	Trp	Ala	Lys	Thr	Val	Thr	Leu	Ser	Leu	Arg	Asn	Leu	Lys	Val	Asn	
		435					440					445				

Leu Gly Gln Arg Met Arg Val Lys Val Asn Gly Thr Arg Val Thr Leu  
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 Pro Tyr Phe Val Val Ala Gly Gly Gln Asn Val Thr Ile Glu Arg Leu  
 465 470 475 480  
 Ala Asp Gly Gly Ala Val Met Leu Arg Ser Glu Met Gly Leu Thr Leu  
 485 490 495  
 Glu Trp Asn Gly Ala Gly Phe Leu Gln Val Ser Val Pro Ala Lys Phe  
 500 505 510  
 Lys Lys Arg Leu Cys Gly Leu Cys Gly Asn Phe Asn Gly Ser Ser Arg  
 515 520 525  
 Asp Asp Leu Thr Gly Lys Asp Gly Arg Ser His Gly Asp Asp Glu Val  
 530 535 540  
 Trp His Phe Ala Asn Ser Trp Lys Val Gly Gly Pro Lys Ser Cys Ser  
 545 550 555 560  
 Arg Lys Arg Glu Phe Leu Ala Ala Thr Pro Thr Arg Asp Lys Arg Lys  
 565 570 575  
 Ser Asn Phe Tyr Cys His Pro Leu Ser Val Pro Ala Leu Phe Gly Glu  
 580 585 590  
 Cys Asn Glu Arg Leu Asn Pro Glu Asn Tyr Lys Ala Ala Cys Arg Met  
 595 600 605  
 Asp Val Cys Glu Cys Pro Ser Gly Asp Cys His Cys Asp Ser Phe Ala  
 610 615 620  
 Ala Tyr Ala His Glu Cys Arg Arg Leu Gly Val Gln Leu Pro Asp Trp  
 625 630 635 640  
 Arg Ser Ala Thr Asn Cys Pro Ala Gly Trp Arg Arg Asn Ala Thr Leu  
 645 650 655  
 Ser Ser Phe Lys Gly Asn Gln Phe Tyr Gly Asp Pro Ser Phe Ser Arg  
 660 665 670  
 Met Lys Gly Arg Arg Gln Lys Asn His Gln Leu Arg Leu Gln Leu Gln  
 675 680 685  
 Gln Glu Gln Gln Gln Arg Ser Lys Gln Gly Gln Lys Gly Arg His Lys  
 690 695 700  
 Pro Gly Gly His Asn Gln Leu Asp Arg Gln Gly His Asn Gly Leu Asp  
 705 710 715 720  
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 Arg Cys Lys Gly Cys Ser Phe Arg Gly Met Ser Tyr Glu Ser Gly Ser  
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 Glu Trp Asn Asp Pro Glu Asp Pro Cys Lys Thr Tyr Lys Cys Val Ala  
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 Thr Val Val Thr Glu Thr Ile Gln Lys Cys Tyr Ser Gln Cys Asp Asn  
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 Asn Gln Leu Gln Pro Pro Arg Pro Gly Glu Cys Cys Pro Thr Cys Gln  
                   85                  90                  95  
 Gly Cys Lys Ile Asn Gly Gln Thr Val Ala Glu Gly His Glu Val Asp  
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 Ala Ser Ile Asp Asp Arg Cys Leu Val Cys Gln Cys Arg Gly Thr Gln  
           115                  120                  125  
 Leu Thr Cys Ser Lys Lys Thr Cys Pro Val Leu Pro Cys Pro Met Ser  
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 Lys Gln Ile Lys Arg Pro Asp Glu Cys Cys Pro Arg Cys Pro Gln Asn  
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 His Ser Phe Leu Pro Val Pro Gly Lys Cys Leu Phe Asn Lys Ser Val  
                   165                  170                  175  
 Tyr Pro Glu Lys Thr Gln Phe Met Pro Asp Arg Cys Thr Asn Cys Thr  
           180                  185                  190  
 Cys Leu Asn Gly Thr Ser Val Cys Gln Arg Pro Thr Cys Pro Ile Leu  
           195                  200                  205  
 Glu Cys Ala Pro Glu Phe Gln Glu Pro Asp Gly Cys Cys Pro Arg Cys  
   210                  215                  220  
 Ala Val Ala Glu Val Arg Ser Glu Cys Ser Leu Asp Gly Ile Val Tyr  
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 Gln Asn Asn Glu Thr Trp Asp Met Gly Pro Cys Arg Ser Cys Arg Cys  
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 Asn Gly Gly Thr Ile Arg Cys Ala Gln Met Arg Cys Pro Ala Val Lys

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Phe	Arg	Thr	Phe	Asp	Gly	Lys	Phe	Phe	Ser	Phe	Gln	Gly	Ser	Cys	Lys																														
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Tyr	Leu	Leu	Ala	Ser	Asp	Cys	Met	Gly	Lys	Thr	Phe	His	Ile	Arg	Leu																														
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Thr	Asn	Glu	Gly	Arg	Gly	Thr	Arg	Arg	Ala	Ser	Trp	Ala	Lys	Thr	Val																														
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Met	Leu	Arg	Ser	Glu	Met	Gly	Leu	Thr	Leu	Glu	Trp	Asn	Gly	Ala	Gly																														
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Phe	Leu	Gln	Val	Ser	Val	Pro	Ala	Lys	Phe	Lys	Lys	Arg	Leu	Cys	Gly																														
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Leu	Cys	Gly	Asn	Phe	Asn	Gly	Ser	Ser	Arg	Asp	Asp	Leu	Thr	Gly	Lys																														
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Trp	Lys	Val	Gly	Gly	Pro	Lys	Ser	Cys	Ser	Arg	Lys	Arg	Glu	Phe	Leu																														
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Ala	Ala	Thr	Pro	Thr	Cys	Asp	Lys	Arg	Lys	Ser	Asn	Phe	Tyr	Cys	His																														
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Pro	Leu	Ser	Val	Pro	Ala	Leu	Phe	Gly	Glu	Cys	Asn	Glu	Arg	Leu	Asn																														
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Pro	Glu	Asn	Tyr	Lys	Ala	Ala	Cys	Arg	Met	Asp	Val	Cys	Glu	Cys	Pro																														
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Ser	Gly	Asp	Cys	His	Cys	Asp	Ser	Phe	Ala	Ala	Tyr	Ala	His	Glu	Cys																														
		530				535					540																																		
Arg	Arg	Leu	Gly	Val	Gln	Leu	Pro	Asp	Trp	Arg	Ser	Ala	Thr	Asn	Cys																														
		545			550				555					560																															
Pro	Ala	Gly	Trp	Arg	Arg	Asn	Ala	Thr	Leu	Ser	Ser	Phe	Lys	Gly	Asn																														





Gly Thr Cys Gln Tyr Val Leu Thr Lys Asp Cys Ser Ser Pro Ala Ser  
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 Pro Phe Gln Val Leu Val Lys Asn Asp Ala Arg Arg Thr Arg Ser Phe  
 180 185 190  
 Ser Trp Thr Lys Ser Val Glu Leu Met Leu Gly Glu Ser Thr Val Ser  
 195 200 205  
 Leu Gln Gln His Leu Thr Val Arg Trp Asn Gly Ser Arg Ile Ala Leu  
 210 215 220  
 Pro Cys His Thr Pro His Phe His Ile Asp Leu Asp Gly Tyr Leu Leu  
 225 230 235 240  
 Lys Val Thr Thr Arg Ala Gly Leu Glu Ile Ser Trp Asp Gly Asp Ser  
 245 250 255  
 Phe Val Glu Val Met Ala Ala Pro His Leu Lys Gly Lys Leu Cys Gly  
 260 265 270  
 Leu Cys Gly Asn Tyr Asn Gly His Lys Arg Asp Asp Leu Ile Gly Gly  
 275 280 285  
 Asp Gly Asn Phe Lys Phe Asp Val Asp Asp Phe Ala Glu Ser Trp Arg  
 290 295 300  
 Val Glu Ser Asn Glu Phe Cys Asn Arg Pro Gln Arg Lys Pro Val Pro  
 305 310 315 320  
 Glu Leu Cys Gln Gly Thr Val Lys Val Lys Leu Arg Ala His Arg Glu  
 325 330 335  
 Cys Gln Lys Leu Lys Ser Trp Glu Phe Gln Thr Cys His Ser Thr Val  
 340 345 350  
 Asp Tyr Thr Thr Phe Tyr Arg Ser Cys Val Thr Asp Met Cys Glu Cys  
 355 360 365  
 Pro Val His Lys Asn Cys Tyr Cys Glu Ser Phe Leu Ala Tyr Thr Arg  
 370 375 380  
 Ala Cys Gln Arg Glu Gly Ile Lys Val His Trp Glu Pro Gln Gln Ser  
 385 390 395 400  
 Cys Ala Ala Thr Gln Cys Lys His Gly Ala Val Tyr Asp Thr Cys Gly  
 405 410 415  
 Pro Gly Cys Val Lys Thr Cys Asp Asn Trp Asn Glu Ile Gly Pro Cys  
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 35 40 45  
 Pro Leu Cys Asp Trp Ser Gln Val Ser Ala Asp Asp Glu Asp Trp Val  
 50 55 60  
 Arg Ala Ser Gly Pro Ser Pro Thr Gly Ser Thr Gly Ala Pro Gly Gly  
 65 70 75 80  
 Tyr Pro Asn Gly Glu Gly Ser Tyr Leu His Met Glu Ser Asn Ser Phe  
 85 90 95  
 His Arg Gly Gly Val Ala Arg Leu Leu Ser Pro Asp Leu Trp Glu Gln  
 100 105 110  
 Gly Pro Leu Cys Val His Phe Ala His His Met Phe Gly Leu Ser Trp  
 115 120 125  
 Gly Ala Gln Leu Arg Leu Leu Leu Leu Ser Gly Glu Glu Gly Arg Arg  
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 Pro Asp Val Leu Trp Lys His Trp Asn Thr Gln Arg Pro Ser Trp Met  
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 Met Phe Glu Gly Thr Arg Gly Ser Thr Ala Tyr Leu Asp Ile Ala Leu  
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 Asp Ala Leu Ser Ile Arg Arg Gly Ser Cys Asn Arg Val Cys Met Met  
 195 200 205  
 Gln Thr Cys Ser Phe Asp Ile Pro Asn Asp Leu Cys Asp Trp Thr Trp  
 210 215 220  
 Ile Pro Thr Ala Ser Gly Ala Lys Trp Thr Gln Lys Lys Gly Ser Ser  
 225 230 235 240  
 Gly Lys Pro Gly Val Gly Pro Asp Gly Asp Phe Ser Ser Pro Gly Ser  
 245 250 255  
 Gly Cys Tyr Met Leu Leu Asp Pro Lys Asn Ala Arg Pro Gly Gln Lys  
 260 265 270

Ala Val Leu Leu Ser Pro Val Ser Leu Ser Ser Gly Cys Leu Ser Phe  
 275 280 285  
 Ser Phe His Tyr Ile Leu Arg Gly Gln Ser Pro Gly Ala Ala Leu His  
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 Ile Tyr Ala Ser Val Leu Gly Ser Ile Arg Lys His Thr Leu Phe Ser  
 305 310 315 320  
 Gly Gln Pro Gly Pro Asn Trp Gln Ala Val Ser Val Asn Tyr Thr Ala  
 325 330 335  
 Val Gly Arg Ile Gln Phe Ala Val Val Gly Val Phe Gly Lys Thr Pro  
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 Glu Pro Ala Val Ala Val Asp Ala Thr Ser Ile Ala Pro Cys Gly Glu  
 355 360 365  
 Gly Phe Pro Gln Cys Asp Phe Glu Asp Asn Ala His Pro Phe Cys Asp  
 370 375 380  
 Trp Val Gln Thr Ser Gly Asp Gly Gly His Trp Ala Leu Gly His Lys  
 385 390 395 400  
 Asn Gly Pro Val His Gly Met Gly Pro Ala Gly Gly Phe Pro Asn Ala  
 405 410 415  
 Gly Gly His Tyr Ile Tyr Leu Glu Ala Asp Glu Phe Ser Gln Ala Gly  
 420 425 430  
 Gln Ser Val Arg Leu Val Ser Arg Pro Phe Cys Ala Pro Gly Asp Ile  
 435 440 445  
 Cys Val Glu Phe Ala Tyr His Met Tyr Gly Leu Gly Glu Gly Thr Met  
 450 455 460  
 Leu Glu Leu Leu Leu Gly Ser Pro Ala Gly Ser Pro Pro Ile Pro Leu  
 465 470 475 480  
 Trp Lys Arg Val Gly Ser Gln Arg Pro Tyr Trp Gln Asn Thr Ser Val  
 485 490 495  
 Thr Val Pro Ser Gly His Gln Gln Pro Met Gln Leu Ile Phe Lys Gly  
 500 505 510  
 Ile Gln Gly Ser Asn Thr Ala Ser Val Val Ala Met Gly Phe Ile Leu  
 515 520 525  
 Ile Asn Pro Gly Thr Cys Pro Val Lys Val Leu Pro Glu Leu Pro Pro  
 530 535 540  
 Val Ser Pro Val Ser Ser Thr Gly Pro Ser Glu Thr Thr Gly Leu Thr  
 545 550 555 560  
 Glu Asn Pro Thr Ile Ser Thr Lys Lys Pro Thr Val Ser Ile Glu Lys  
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Pro Ser Val Thr Thr Glu Lys Pro Thr Val Pro Lys Glu Lys Pro Thr  
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 Ile Pro Thr Glu Lys Pro Thr Ile Ser Thr Glu Lys Pro Thr Ile Pro  
 595 600 605  
 Ser Glu Lys Pro Asn Met Pro Ser Glu Lys Pro Thr Ile Pro Ser Glu  
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 Lys Pro Thr Ile Leu Thr Glu Lys Pro Thr Ile Pro Ser Glu Lys Pro  
 625 630 635 640  
 Thr Ile Pro Ser Glu Lys Pro Thr Ile Ser Thr Glu Lys Pro Thr Val  
 645 650 655  
 Pro Thr Glu Glu Pro Thr Thr Pro Thr Glu Glu Thr Thr Thr Ser Met  
 660 665 670  
 Glu Glu Pro Val Ile Pro Thr Glu Lys Pro Ser Ile Pro Thr Glu Lys  
 675 680 685  
 Pro Ser Ile Pro Thr Glu Lys Pro Thr Ile Ser Met Glu Glu Thr Ile  
 690 695 700  
 Ile Ser Thr Glu Lys Pro Thr Ile Ser Pro Glu Lys Pro Thr Ile Pro  
 705 710 715 720  
 Thr Glu Lys Pro Thr Ile Pro Thr Glu Lys Ser Thr Ile Ser Pro Glu  
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 Lys Pro Thr Thr Pro Thr Glu Lys Pro Thr Ile Pro Thr Glu Lys Pro  
 740 745 750  
 Thr Ile Ser Pro Glu Lys Pro Thr Thr Pro Thr Glu Lys Pro Thr Ile  
 755 760 765  
 Ser Pro Glu Lys Leu Thr Ile Pro Thr Glu Lys Pro Thr Ile Pro Thr  
 770 775 780  
 Glu Lys Pro Thr Ile Pro Thr Glu Lys Pro Thr Ile Ser Thr Glu Glu  
 785 790 795 800  
 Pro Thr Thr Pro Thr Glu Glu Thr Thr Ile Ser Thr Glu Lys Pro Ser  
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 Ile Pro Met Glu Lys Pro Thr Leu Pro Thr Glu Glu Thr Thr Thr Ser  
 820 825 830  
 Val Glu Glu Thr Thr Ile Ser Thr Glu Lys Leu Thr Ile Pro Met Glu  
 835 840 845  
 Lys Pro Thr Ile Ser Thr Glu Lys Pro Thr Ile Pro Thr Glu Lys Pro  
 850 855 860  
 Thr Ile Ser Pro Glu Lys Leu Thr Ile Pro Thr Glu Lys Leu Thr Ile  
 865 870 875 880

Pro Thr Glu Lys Pro Thr Ile Pro Ile Glu Glu Thr Thr Ile Ser Thr  
 885 890 895  
 Glu Lys Leu Thr Ile Pro Thr Glu Lys Pro Thr Ile Ser Pro Glu Lys  
 900 905 910  
 Pro Thr Ile Ser Thr Glu Lys Pro Thr Ile Pro Thr Glu Lys Pro Thr  
 915 920 925  
 Ile Pro Thr Glu Glu Thr Thr Ile Ser Thr Glu Lys Leu Thr Ile Pro  
 930 935 940  
 Thr Glu Lys Pro Thr Ile Ser Pro Glu Lys Leu Thr Ile Pro Thr Glu  
 945 950 955 960  
 Lys Pro Thr Ile Ser Thr Glu Lys Pro Thr Ile Pro Thr Glu Lys Leu  
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 Thr Ile Pro Thr Glu Lys Pro Thr Ile Pro Thr Glu Lys Pro Thr Ile  
 980 985 990  
 Pro Thr Glu Lys Leu Thr Ala Leu Arg Pro Pro His Pro Ser Pro Thr  
 995 1000 1005  
 Ala Thr Gly Leu Ala Ala Leu Val Met Ser Pro His Ala Pro Ser Thr  
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 Pro Met Thr Ser Val Ile Leu Gly Thr Thr Thr Thr Ser Arg Ser Ser  
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 Thr Glu Arg Cys Pro Pro Asn Ala Arg Tyr Glu Ser Cys Ala Cys Pro  
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 Gly Cys Val Cys Asn Pro Gly Phe Leu Phe Ser Asp Asn His Cys Ile  
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 Gln Ala Ser Ser Cys Asn Cys Phe Tyr Asn Asn Asp Tyr Tyr Glu Pro  
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 Gly Ala Glu Trp Phe Ser Pro Asn Cys Thr Glu His Cys Arg Cys Trp  
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 Val Cys Gln Leu Lys Asn Gly Gln Tyr Gly Cys His Pro Tyr Ala Gly  
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 Thr Ala Thr Cys Leu Val Tyr Gly Asp Pro His Tyr Val Thr Phe Asp  
 1155 1160 1165  
 Gly Arg His Phe Gly Phe Met Gly Lys Cys Thr Tyr Ile Leu Ala Gln  
 1170 1175 1180

Pro Cys Gly Asn Ser Thr Asp Pro Phe Phe Arg Val Thr Ala Lys Asn  
 1185 1190 1195 1200  
 Glu Glu Gln Gly Gln Glu Gly Val Ser Cys Leu Ser Lys Val Tyr Val  
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 Thr Leu Pro Glu Ser Thr Val Thr Leu Leu Lys Gly Arg Arg Thr Leu  
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 Lys Glu Glu Leu Gly Asn Ser Trp Gln Thr Asp Gln Asp Glu Asp Gln  
 1315 1320 1325  
 Glu Cys Gln Lys Tyr Gln Val Val Asn Ser Pro Ser Cys Asp Ser Ser  
 1330 1335 1340  
 Leu Gln Ser Ser Met Ser Gly Pro Gly Phe Cys Gly Arg Leu Val Asp  
 1345 1350 1355 1360  
 Thr His Gly Pro Phe Glu Thr Cys Leu Leu His Val Lys Ala Ala Ser  
 1365 1370 1375  
 Phe Phe Asp Ser Cys Met Leu Asp Met Cys Gly Phe Gln Gly Leu Gln  
 1380 1385 1390  
 His Leu Leu Cys Thr His Met Ser Thr Met Thr Thr Thr Cys Gln Asp  
 1395 1400 1405  
 Ala Gly His Ala Val Lys Pro Trp Arg Glu Pro His Phe Cys Pro Met  
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 Ala Cys Pro Pro Asn Ser Lys Tyr Ser Leu Cys Ala Lys Pro Cys Pro  
 1425 1430 1435 1440  
 Asp Thr Cys His Ser Gly Phe Ser Gly Met Phe Cys Ser Asp Arg Cys  
 1445 1450 1455  
 Val Glu Ala Cys Glu Cys Asn Pro Gly Phe Val Leu Ser Gly Leu Glu  
 1460 1465 1470  
 Cys Ile Pro Arg Ser Gln Cys Gly Cys Leu His Pro Ala Gly Ser Tyr  
 1475 1480 1485

Phe Lys Val Gly Glu Arg Trp Tyr Lys Pro Gly Cys Lys Glu Leu Cys  
1490 1495 1500  
Val Cys Glu Ser Asn Asn Arg Ile Arg Cys Gln Pro Trp Arg Cys Arg  
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Ala Gln Glu Phe Cys Gly Gln Gln Asp Gly Ile Tyr Gly Cys His Ala  
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Gln Gly Ala Ala Thr Cys Thr Ala Ser Gly Asp Pro His Tyr Leu Thr  
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Phe Asp Gly Ala Leu His His Phe Met Gly Thr Cys Thr Tyr Val Leu  
1555 1560 1565  
Thr Arg Pro Cys Trp Ser Arg Ser Gln Asp Ser Tyr Phe Val Val Ser  
1570 1575 1580  
Ala Thr Asn Glu Asn Arg Gly Gly Ile Leu Glu Val Ser Tyr Ile Lys  
1585 1590 1595 1600  
Ala Val His Val Thr Val Phe Asp Leu Ser Ile Ser Leu Leu Arg Gly  
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Cys Lys Val Met Leu Asn Gly His Arg Val Ala Leu Pro Val Trp Leu  
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Ala Gln Gly Arg Val Thr Ile Arg Leu Ser Ser Asn Leu Val Leu Leu  
1635 1640 1645  
Tyr Thr Asn Phe Gly Leu Gln Val Arg Tyr Asp Gly Ser His Leu Val  
1650 1655 1660  
Glu Val Thr Val Pro Ser Ser Tyr Gly Gly Gln Leu Cys Gly Leu Cys  
1665 1670 1675 1680  
Gly Asn Tyr Asn Asn Asn Ser Leu Asp Asp Asn Leu Arg Pro Asp Arg  
1685 1690 1695  
Lys Leu Ala Gly Asp Ser Met Gln Leu Gly Ala Ala Trp Lys Leu Pro  
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1715 1720 1725  
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Leu Ile Asn Pro Gln Gly Pro Phe Ser Gln Cys His Gln Val Val Pro  
1745 1750 1755 1760  
Pro Gln Ser Ser Phe Ala Ser Cys Val His Gly Gln Cys Gly Thr Lys  
1765 1770 1775  
Gly Asp Thr Thr Ala Leu Cys Arg Ser Leu Gln Ala Tyr Ala Ser Leu  
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Cys Ala Gln Ala Gly Gln Ala Pro Ala Trp Arg Asn Arg Thr Phe Cys  
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 Cys Pro Asp Thr Cys Ser Ser Ile Asn Asn Pro Arg Asp Cys Pro Lys  
 1825 1830 1835 1840  
 Ala Leu Pro Cys Ala Glu Ser Cys Glu Cys Gln Lys Gly His Ile Leu  
 1845 1850 1855  
 Ser Gly Thr Ser Cys Val Pro Leu Gly Gln Cys Gly Cys Thr Asp Pro  
 1860 1865 1870  
 Ala Gly Ser Tyr His Pro Val Gly Glu Arg Trp Tyr Thr Glu Asn Thr  
 1875 1880 1885  
 Cys Thr Arg Leu Cys Thr Cys Ser Val His Asn Asn Ile Thr Cys Phe  
 1890 1895 1900  
 Gln Ser Thr Cys Lys Pro Asn Gln Ile Cys Trp Ala Leu Asp Gly Leu  
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 1925 1930 1935  
 Ser His Tyr Val Ser Phe Asp Gly Ser Asn His Ser Ile Pro Asp Ala  
 1940 1945 1950  
 Cys Thr Leu Val Leu Val Lys Val Cys His Pro Ala Met Ala Leu Pro  
 1955 1960 1965  
 Phe Phe Lys Ile Ser Ala Lys His Glu Lys Glu Glu Gly Gly Thr Glu  
 1970 1975 1980  
 Ala Phe Arg Leu His Glu Val Tyr Ile Asp Ile Tyr Asp Ala Gln Val  
 1985 1990 1995 2000  
 Thr Leu Gln Lys Gly His Arg Val Leu Ile Asn Ser Lys Gln Val Thr  
 2005 2010 2015  
 Leu Pro Ala Ile Ser Gln Ile Pro Gly Val Ser Val Lys Ser Ser Ser  
 2020 2025 2030  
 Ile Tyr Ser Ile Val Asn Ile Lys Ile Gly Val Gln Val Lys Phe Asp  
 2035 2040 2045  
 Gly Asn His Leu Leu Glu Ile Glu Ile Pro Thr Thr Tyr Tyr Gly Lys  
 2050 2055 2060  
 Val Cys Gly Met Cys Gly Asn Phe Asn Asp Glu Glu Glu Asp Glu Leu  
 2065 2070 2075 2080  
 Met Met Pro Ser Asp Glu Val Ala Asn Ser Asp Ser Glu Phe Val Asn  
 2085 2090 2095



Ser Trp Lys Asp Lys Asp Ile Asp Pro Ser Cys Gln Ser Leu Leu Val  
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 Asp Glu Gln Gln Ile Pro Ala Glu Gln Gln Glu Asn Pro Ser Gly Asn  
 2115 2120 2125  
 Cys Arg Ala Ala Asp Leu Arg Arg Ala Arg Glu Lys Cys Glu Ala Ala  
 2130 2135 2140  
 Leu Arg Ala Pro Val Trp Ala Gln Cys Ala Ser Arg Ile Asp Leu Thr  
 2145 2150 2155 2160  
 Pro Phe Leu Val Asp Cys Ala Asn Thr Leu Cys Glu Phe Gly Gly Leu  
 2165 2170 2175  
 Tyr Gln Ala Leu Cys Gln Ala Leu Gln Ala Phe Gly Ala Thr Cys Gln  
 2180 2185 2190  
 Ser Gln Gly Leu Lys Pro Pro Leu Trp Arg Asn Ser Ser Phe Cys Pro  
 2195 2200 2205  
 Leu Glu Cys Pro Ala Tyr Ser Ser Tyr Thr Asn Cys Leu Pro Ser Cys  
 2210 2215 2220  
 Ser Pro Ser Cys Trp Asp Leu Asp Gly Arg Cys Glu Gly Ala Lys Val  
 2225 2230 2235 2240  
 Pro Ser Ala Cys Ala Glu Gly Cys Ile Cys Gln Pro Gly Tyr Val Leu  
 2245 2250 2255  
 Ser Glu Asp Lys Cys Val Pro Arg Ser Gln Cys Gly Cys Lys Asp Ala  
 2260 2265 2270  
 His Gly Gly Ser Ile Pro Leu Gly Lys Ser Trp Val Ser Ser Gly Cys  
 2275 2280 2285  
 Thr Glu Lys Cys Val Cys Thr Gly Gly Ala Ile Gln Cys Gly Asp Phe  
 2290 2295 2300  
 Arg Cys Pro Ser Gly Ser His Cys Gln Leu Thr Ser Asp Asn Ser Asn  
 2305 2310 2315 2320  
 Ser Asn Cys Val Ser Asp Lys Ser Glu Gln Cys Ser Val Tyr Gly Asp  
 2325 2330 2335  
 Pro Arg Tyr Leu Thr Phe Asp Gly Phe Ser Tyr Arg Leu Gln Gly Arg  
 2340 2345 2350  
 Met Thr Tyr Val Leu Ile Lys Thr Val Asp Val Leu Pro Glu Gly Val  
 2355 2360 2365  
 Glu Pro Leu Leu Val Glu Gly Arg Asn Lys Met Asp Pro Pro Arg Ser  
 2370 2375 2380  
 Ser Ile Phe Leu Gln Glu Val Ile Thr Thr Val Tyr Gly Tyr Lys Val  
 2385 2390 2395 2400

Gln Leu Gln Ala Gly Leu Glu Leu Val Val Asn Asn Gln Lys Met Ala  
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 Val Pro Tyr Arg Pro Asn Glu His Leu Arg Val Thr Leu Trp Gly Gln  
                   2420                                  2425                                  2430  
 Arg Leu Tyr Leu Val Thr Asp Phe Glu Leu Val Val Ser Phe Gly Gly  
                   2435                                  2440                                  2445  
 Arg Lys Asn Ala Val Ile Ser Leu Pro Ser Met Tyr Glu Gly Leu Val  
                   2450                                  2455                                  2460  
 Ser Gly Leu Cys Gly Asn Tyr Asp Lys Asn Arg Lys Asn Asp Met Met  
 2465                                  2470                                  2475                                  2480  
 Leu Pro Ser Gly Ala Leu Thr Gln Asn Leu Asn Thr Phe Gly Asn Ser  
                   2485                                  2490                                  2495  
 Trp Glu Val Lys Thr Glu Asp Ala Leu Leu Arg Phe Pro Arg Ala Ile  
                   2500                                  2505                                  2510  
 Pro Ala Glu Glu Glu Gly Gln Gly Ala Glu Leu Gly Leu Arg Thr Gly  
                   2515                                  2520                                  2525  
 Leu Gln Val Ser Glu Cys Ser Pro Glu Gln Leu Ala Ser Asn Ser Thr  
                   2530                                  2535                                  2540  
 Gln Ala Cys Arg Val Leu Ala Asp Pro Gln Gly Pro Phe Ala Ala Cys  
 2545                                  2550                                  2555                                  2560  
 His Gln Thr Val Ala Pro Glu Pro Phe Gln Glu His Cys Val Leu Asp  
                   2565                                  2570                                  2575  
 Leu Cys Ser Ala Gln Asp Pro Arg Glu Gln Glu Glu Leu Arg Cys Gln  
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 Val Leu Ser Gly Trp Ala Ala Ala Phe  
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 <212> PRT  
 <213> Homo sapiens

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 Leu Cys Ala Tyr Ile Leu Leu Leu Met Val Ser Gln Leu Arg Ala Val  
                   20                                  25                                  30  
 Ser Phe Pro Glu Asp Asp Glu Pro Leu Asn Thr Val Asp Tyr His Tyr  
                   35                                  40                                  45  
 Ser Arg Gln Tyr Pro Val Phe Arg Gly Arg Pro Ser Gly Asn Glu Ser

50					55					60					
Gln	His	Arg	Leu	Asp	Phe	Gln	Leu	Met	Leu	Lys	Ile	Arg	Asp	Thr	Leu
65					70					75					80
Tyr	Ile	Ala	Gly	Arg	Asp	Gln	Val	Tyr	Thr	Val	Asn	Leu	Asn	Glu	Met
				85					90					95	
Pro	Lys	Thr	Glu	Val	Ile	Pro	Asn	Lys	Lys	Leu	Thr	Trp	Arg	Ser	Arg
			100					105					110		
Gln	Gln	Asp	Arg	Glu	Asn	Cys	Ala	Met	Lys	Gly	Lys	His	Lys	Asp	Glu
		115					120					125			
Cys	His	Asn	Phe	Ile	Lys	Val	Phe	Val	Pro	Arg	Asn	Asp	Glu	Met	Val
	130					135					140				
Phe	Val	Cys	Gly	Thr	Asn	Ala	Phe	Asn	Pro	Met	Cys	Arg	Tyr	Tyr	Arg
145					150					155					160
Leu	Ser	Thr	Leu	Glu	Tyr	Asp	Gly	Glu	Glu	Ile	Ser	Gly	Leu	Ala	Arg
				165					170					175	
Cys	Pro	Phe	Asp	Ala	Arg	Gln	Thr	Asn	Val	Ala	Leu	Phe	Ala	Asp	Gly
			180					185					190		
Lys	Leu	Tyr	Ser	Ala	Thr	Val	Ala	Asp	Phe	Leu	Ala	Ser	Asp	Ala	Val
		195					200					205			
Ile	Tyr	Arg	Ser	Met	Gly	Asp	Gly	Ser	Ala	Leu	Arg	Thr	Ile	Lys	Tyr
	210					215					220				
Asp	Ser	Lys	Trp	Ile	Lys	Glu	Pro	His	Phe	Leu	His	Ala	Ile	Glu	Tyr
225					230					235					240
Gly	Asn	Tyr	Val	Tyr	Phe	Phe	Phe	Arg	Glu	Ile	Ala	Val	Glu	His	Asn
				245					250					255	
Asn	Leu	Gly	Lys	Ala	Val	Tyr	Ser	Arg	Val	Ala	Arg	Ile	Cys	Lys	Asn
			260					265					270		
Asp	Met	Gly	Gly	Ser	Gln	Arg	Val	Leu	Glu	Lys	His	Trp	Thr	Ser	Phe
		275					280					285			
Leu	Lys	Ala	Arg	Leu	Asn	Cys	Ser	Val	Pro	Gly	Asp	Ser	Phe	Phe	Tyr
	290					295					300				
Phe	Asp	Val	Leu	Gln	Ser	Ile	Thr	Asp	Ile	Ile	Gln	Ile	Asn	Gly	Ile
305					310					315					320
Pro	Thr	Val	Val	Gly	Val	Phe	Thr	Thr	Gln	Leu	Asn	Ser	Ile	Pro	Gly
				325					330					335	
Ser	Ala	Val	Cys	Ala	Phe	Ser	Met	Asp	Asp	Ile	Glu	Lys	Val	Phe	Lys
			340					345					350		
Gly	Arg	Phe	Lys	Glu	Gln	Lys	Thr	Pro	Asp	Ser	Val	Trp	Thr	Ala	Val

355					360					365					
Pro	Glu	Asp	Lys	Val	Pro	Lys	Pro	Arg	Pro	Gly	Cys	Cys	Ala	Lys	His
370					375					380					
Gly	Leu	Ala	Glu	Ala	Tyr	Lys	Thr	Ser	Ile	Asp	Phe	Pro	Asp	Glu	Thr
385					390					395					400
Leu	Ser	Phe	Ile	Lys	Ser	His	Pro	Leu	Met	Asp	Ser	Ala	Val	Pro	Pro
				405					410					415	
Ile	Ala	Asp	Glu	Pro	Trp	Phe	Thr	Lys	Thr	Arg	Val	Arg	Tyr	Arg	Leu
			420					425					430		
Thr	Ala	Ile	Ser	Val	Asp	His	Ser	Ala	Gly	Pro	Tyr	Gln	Asn	Tyr	Thr
				435				440				445			
Val	Ile	Phe	Val	Gly	Ser	Glu	Ala	Gly	Met	Val	Leu	Lys	Val	Leu	Ala
	450					455					460				
Lys	Thr	Ser	Pro	Phe	Ser	Leu	Asn	Asp	Ser	Val	Leu	Leu	Glu	Glu	Ile
465						470					475				480
Glu	Ala	Tyr	Asn	His	Ala	Lys	Cys	Ser	Ala	Glu	Asn	Glu	Glu	Asp	Lys
				485					490					495	
Lys	Val	Ile	Ser	Leu	Gln	Leu	Asp	Lys	Asp	His	His	Ala	Leu	Tyr	Val
				500				505					510		
Ala	Phe	Ser	Ser	Cys	Ile	Ile	Arg	Ile	Pro	Leu	Ser	Arg	Cys	Glu	Arg
				515			520					525			
Tyr	Gly	Ser	Cys	Lys	Lys	Ser	Cys	Ile	Ala	Ser	Arg	Asp	Pro	Tyr	Cys
	530					535					540				
Gly	Trp	Leu	Ser	Gln	Gly	Ser	Cys	Gly	Arg	Val	Thr	Pro	Gly	Met	Leu
545						550					555				560
Leu	Leu	Thr	Glu	Asp	Phe	Phe	Ala	Phe	His	Asn	His	Ser	Ala	Glu	Gly
				565					570					575	
Tyr	Glu	Gln	Asp	Thr	Glu	Phe	Gly	Asn	Thr	Ala	His	Leu	Gly	Asp	Cys
			580					585					590		
His	Gly	Val	Arg	Trp	Glu	Val	Gln	Ser	Gly	Glu	Ser	Asn	Gln	Met	Val
				595			600					605			
His	Met	Asn	Val	Leu	Ile	Thr	Cys	Val	Phe	Ala	Ala	Phe	Val	Leu	Gly
	610					615					620				
Ala	Phe	Ile	Ala	Gly	Val	Ala	Val	Tyr	Cys	Tyr	Arg	Asp	Met	Phe	Val
625						630					635				640
Arg	Lys	Asn	Arg	Lys	Ile	His	Lys	Asp	Ala	Glu	Ser	Ala	Gln	Ser	Cys
				645					650					655	
Thr	Asp	Ser	Ser	Gly	Ser	Phe	Ala	Lys	Leu	Asn	Gly	Leu	Phe	Asp	Ser



965 970 975  
 Gln Ser Ser Tyr Thr Ser Asn Gly Thr Leu Pro Arg Thr Gly Leu Lys  
 980 985 990  
 Arg Thr Pro Ser Leu Lys Pro Asp Val Pro Pro Lys Pro Ser Phe Val  
 995 1000 1005  
 Pro Gln Thr Pro Ser Val Arg Pro Leu Asn Lys Tyr Thr Tyr  
 1010 1015 1020  
  
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 <212> PRT  
 <213> Homo sapiens  
  
 <400> 61  
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 Gln Leu Arg Ala Val Ser Phe Pro Glu Asp Asp Glu Pro Leu Asn Thr  
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 Val Asp Tyr His Tyr Ser Arg Gln Tyr Pro Val Phe Arg Gly Arg Pro  
 35 40 45  
 Ser Gly Asn Glu Ser Gln His Arg Leu Asp Phe Gln Leu Met Leu Lys  
 50 55 60  
 Ile Arg Asp Thr Leu Tyr Ile Ala Gly Arg Asp Gln Val Tyr Thr Val  
 65 70 75 80  
 Asn Leu Asn Glu Met Pro Lys Thr Glu Val Ile Pro Asn Lys Lys Leu  
 85 90 95  
 Thr Trp Arg Ser Arg Gln Gln Asp Arg Glu Asn Cys Ala Met Lys Gly  
 100 105 110  
 Lys His Lys Asp Glu Cys His Asn Phe Ile Lys Val Phe Val Pro Arg  
 115 120 125  
 Asn Asp Glu Met Val Phe Val Cys Gly Thr Asn Ala Phe Asn Pro Met  
 130 135 140  
 Cys Arg Tyr Tyr Arg Leu Ser Thr Leu Glu Tyr Asp Gly Glu Glu Ile  
 145 150 155 160  
 Ser Gly Leu Ala Arg Cys Pro Phe Asp Ala Arg Gln Thr Asn Val Ala  
 165 170 175  
 Leu Phe Ala Asp Gly Lys Leu Tyr Ser Ala Thr Val Ala Asp Phe Leu  
 180 185 190  
 Ala Ser Asp Ala Val Ile Tyr Arg Ser Met Gly Asp Gly Ser Ala Leu  
 195 200 205

Arg Thr Ile Lys Tyr Asp Ser Lys Trp Ile Lys Glu Pro His Phe Leu  
 210 215 220  
 His Ala Ile Glu Tyr Gly Asn Tyr Val Tyr Phe Phe Phe Arg Glu Ile  
 225 230 235 240  
 Ala Val Glu His Asn Asn Leu Gly Lys Ala Val Tyr Ser Arg Val Ala  
 245 250 255  
 Arg Ile Cys Lys Asn Asp Met Gly Gly Ser Gln Arg Val Leu Glu Lys  
 260 265 270  
 His Trp Thr Ser Phe Leu Lys Ala Arg Leu Asn Cys Ser Val Pro Gly  
 275 280 285  
 Asp Ser Phe Phe Tyr Phe Asp Val Leu Gln Ser Ile Thr Asp Ile Ile  
 290 295 300  
 Gln Ile Asn Gly Ile Pro Thr Val Val Gly Val Phe Thr Thr Gln Leu  
 305 310 315 320  
 Asn Ser Ile Pro Gly Ser Ala Val Cys Ala Phe Ser Met Asp Asp Ile  
 325 330 335  
 Glu Lys Val Phe Lys Gly Arg Phe Lys Glu Gln Lys Thr Pro Asp Ser  
 340 345 350  
 Val Trp Thr Ala Val Pro Glu Asp Lys Val Pro Lys Pro Arg Pro Gly  
 355 360 365  
 Cys Cys Ala Lys His Gly Leu Ala Glu Ala Tyr Lys Thr Ser Ile Asp  
 370 375 380  
 Phe Pro Asp Glu Thr Leu Ser Phe Ile Lys Ser His Pro Leu Met Asp  
 385 390 395 400  
 Ser Ala Val Pro Pro Ile Ala Asp Glu Pro Trp Phe Thr Lys Thr Arg  
 405 410 415  
 Val Arg Tyr Arg Leu Thr Ala Ile Ser Val Asp His Ser Ala Gly Pro  
 420 425 430  
 Tyr Gln Asn Tyr Thr Val Ile Phe Val Gly Ser Glu Ala Gly Met Val  
 435 440 445  
 Leu Lys Val Leu Ala Lys Thr Ser Pro Phe Ser Leu Asn Asp Ser Val  
 450 455 460  
 Leu Leu Glu Glu Ile Glu Ala Tyr Asn His Ala Lys Cys Ser Ala Glu  
 465 470 475 480  
 Asn Glu Glu Asp Lys Lys Val Ile Ser Leu Gln Leu Asp Lys Asp His  
 485 490 495  
 His Ala Leu Tyr Val Ala Phe Ser Ser Cys Ile Ile Arg Ile Pro Leu  
 500 505 510

Ser Arg Cys Glu Arg Tyr Gly Ser Cys Lys Lys Ser Cys Ile Ala Ser  
 515 520 525  
 Arg Asp Pro Tyr Cys Gly Trp Leu Ser Gln Gly Ser Cys Gly Arg Val  
 530 535 540  
 Thr Pro Gly Met Leu Leu Leu Thr Glu Asp Phe Phe Ala Phe His Asn  
 545 550 555 560  
 His Ser Ala Glu Gly Tyr Glu Gln Asp Thr Glu Phe Gly Asn Thr Ala  
 565 570 575  
 His Leu Gly Asp Cys His Gly Val Arg Trp Glu Val Gln Ser Gly Glu  
 580 585 590  
 Ser Asn Gln Met Val His Met Asn Val Leu Ile Thr Cys Val Phe Ala  
 595 600 605  
 Ala Phe Val Leu Gly Ala Phe Ile Ala Gly Val Ala Val Tyr Cys Tyr  
 610 615 620  
 Arg Asp Met Phe Val Arg Lys Asn Arg Lys Ile His Lys Asp Ala Glu  
 625 630 635 640  
 Ser Ala Gln Ser Cys Thr Asp Ser Ser Gly Ser Phe Ala Lys Leu Asn  
 645 650 655  
 Gly Leu Phe Asp Ser Pro Val Lys Glu Tyr Gln Gln Asn Ile Asp Ser  
 660 665 670  
 Pro Lys Leu Tyr Ser Asn Leu Leu Thr Ser Arg Lys Glu Leu Pro Pro  
 675 680 685  
 Asn Gly Asp Thr Lys Ser Met Val Met Asp His Arg Gly Gln Pro Pro  
 690 695 700  
 Glu Leu Ala Ala Leu Pro Thr Pro Glu Ser Thr Pro Val Leu His Gln  
 705 710 715 720  
 Lys Thr Leu Gln Ala Met Lys Ser His Ser Glu Lys Ala His Gly His  
 725 730 735  
 Gly Ala Ser Arg Lys Glu Thr Pro Gln Phe Phe Pro Ser Ser Pro Pro  
 740 745 750  
 Pro His Ser Pro Leu Ser His Gly His Ile Pro Ser Ala Ile Val Leu  
 755 760 765  
 Pro Asn Ala Thr His Asp Tyr Asn Thr Ser Phe Ser Asn Ser Asn Ala  
 770 775 780  
 His Lys Ala Glu Lys Lys Leu Gln Asn Ile Asp His Pro Leu Thr Lys  
 785 790 795 800  
 Ser Ser Ser Lys Arg Asp His Arg Arg Ser Val Asp Ser Arg Asn Thr  
 805 810 815



Leu Asn Asp Leu Leu Lys His Leu Asn Asp Pro Asn Ser Asn Pro Lys  
 820 825 830  
 Ala Ile Met Gly Asp Ile Gln Met Ala His Gln Asn Leu Met Leu Asp  
 835 840 845  
 Pro Met Gly Ser Met Ser Glu Val Pro Pro Lys Val Pro Asn Arg Glu  
 850 855 860  
 Ala Ser Leu Tyr Ser Pro Pro Ser Thr Leu Pro Arg Asn Ser Pro Thr  
 865 870 875 880  
 Lys Arg Val Asp Val Pro Thr Thr Pro Gly Val Pro Met Thr Ser Leu  
 885 890 895  
 Glu Arg Gln Arg Gly Tyr His Lys Asn Ser Ser Gln Arg His Ser Ile  
 900 905 910  
 Ser Ala Met Pro Lys Asn Leu Asn Ser Pro Asn Gly Val Leu Leu Ser  
 915 920 925  
 Arg Gln Pro Ser Met Asn Arg Gly Gly Tyr Met Pro Thr Pro Thr Gly  
 930 935 940  
 Ala Lys Val Asp Tyr Ile Gln Gly Thr Pro Val Ser Val His Leu Gln  
 945 950 955 960  
 Pro Ser Leu Ser Arg Gln Ser Ser Tyr Thr Ser Asn Gly Thr Leu Pro  
 965 970 975  
 Arg Thr Gly Leu Lys Arg Thr Pro Ser Leu Lys Pro Asp Val Pro Pro  
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 Lys Pro Ser Phe Val Pro Gln Thr Pro Ser Val Arg Pro Leu Asn Lys  
 995 1000 1005  
 Tyr Thr Tyr  
 1010

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 <212> PRT  
 <213> Homo sapiens

<400> 62  
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 Asn Pro Met Cys Arg Tyr Tyr Arg Leu Ser Thr Leu Glu Tyr Asp Gly  
 35 40 45  
 Glu Glu Ile Ser Gly Leu Ala Arg Cys Pro Phe Asp Ala Arg Gln Thr  
 50 55 60

Asn Val Ala Leu Phe Ala Asp Gly Lys Leu Tyr Ser Ala Thr Val Ala  
 65 70 75 80  
 Asp Phe Leu Ala Ser Asp Ala Val Ile Tyr Arg Ser Met Gly Asp Gly  
 85 90 95  
 Ser Ala Leu Arg Thr Ile Lys Tyr Asp Ser Lys Trp Ile Lys Glu Pro  
 100 105 110  
 His Phe Leu His Ala Ile Glu Tyr Gly Asn Tyr Val Tyr Phe Phe Phe  
 115 120 125  
 Arg Glu Ile Ala Val Glu His Asn Asn Leu Gly Lys Ala Val Tyr Ser  
 130 135 140  
 Arg Val Ala Arg Ile Cys Lys Asn Asp Met Gly Gly Ser Gln Arg Val  
 145 150 155 160  
 Leu Glu Lys His Trp Thr Ser Phe Leu Lys Ala Arg Leu Asn Cys Ser  
 165 170 175  
 Val Pro Gly Asp Ser Phe Phe Tyr Phe Asp Val Leu Gln Ser Ile Thr  
 180 185 190  
 Asp Ile Ile Gln Ile Asn Gly Ile Pro Thr Val Val Gly Val Phe Thr  
 195 200 205  
 Thr Gln Leu Asn Ser Ile Pro Gly Ser Ala Val Cys Ala Phe Ser Met  
 210 215 220  
 Asp Asp Ile Glu Lys Val Phe Lys Gly Arg Phe Lys Glu Gln Lys Thr  
 225 230 235 240  
 Pro Asp Ser Val Trp Thr Ala Val Pro Glu Asp Lys Val Pro Lys Pro  
 245 250 255  
 Arg Pro Gly Cys Cys Ala Lys His Gly Leu Ala Glu Ala Tyr Lys Thr  
 260 265 270  
 Ser Ile Asp Phe Pro Asp Glu Thr Leu Ser Phe Ile Lys Ser His Pro  
 275 280 285  
 Leu Met Asp Ser Ala Val Pro Pro Ile Ala Asp Glu Pro Trp Phe Thr  
 290 295 300  
 Lys Thr Arg Val Arg Tyr Arg Leu Thr Ala Ile Ser Val Asp His Ser  
 305 310 315 320  
 Ala Gly Pro Tyr Gln Asn Tyr Thr Val Ile Phe Val Gly Ser Glu Ala  
 325 330 335  
 Gly Met Val Leu Lys Val Leu Ala Lys Thr Ser Pro Phe Ser Leu Asn  
 340 345 350  
 Asp Ser Val Leu Leu Glu Glu Ile Glu Ala Tyr Asn His Ala Lys  
 355 360 365

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 <212> PRT  
 <213> Homo sapiens

<400> 63  
 Met Arg Ser Glu Ala Leu Leu Leu Tyr Phe Thr Leu Leu His Phe Ala  
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 Gly Ala Gly Phe Pro Glu Asp Ser Glu Pro Ile Ser Ile Ser His Gly  
                   20                  25                  30  
 Asn Tyr Thr Lys Gln Tyr Pro Val Phe Val Gly His Lys Pro Gly Arg  
           35                  40                  45  
 Asn Thr Thr Gln Arg His Arg Leu Asp Ile Gln Met Ile Met Ile Met  
           50                  55                  60  
 Asn Gly Thr Leu Tyr Ile Ala Ala Arg Asp His Ile Tyr Thr Val Asp  
           65                  70                  75                  80  
 Ile Asp Thr Ser His Thr Glu Glu Ile Tyr Cys Ser Lys Lys Leu Thr  
                   85                  90                  95  
 Trp Lys Ser Arg Gln Ala Asp Val Asp Thr Cys Arg Met Lys Gly Lys  
           100                  105                  110  
 His Lys Asp Glu Cys His Asn Phe Ile Lys Val Leu Leu Lys Lys Asn  
           115                  120                  125  
 Asp Asp Ala Leu Phe Val Cys Gly Thr Asn Ala Phe Asn Pro Ser Cys  
           130                  135                  140  
 Arg Asn Tyr Lys Met Asp Thr Leu Glu Pro Phe Gly Asp Glu Phe Ser  
           145                  150                  155                  160  
 Gly Met Ala Arg Cys Pro Tyr Asp Ala Lys His Ala Asn Val Ala Leu  
                   165                  170                  175  
 Phe Ala Asp Gly Lys Leu Tyr Ser Ala Thr Val Thr Asp Phe Leu Ala  
           180                  185                  190  
 Ile Asp Ala Val Ile Tyr Arg Ser Leu Gly Glu Ser Pro Thr Leu Arg  
           195                  200                  205  
 Thr Val Lys His Asp Ser Lys Trp Leu Lys Glu Pro Tyr Phe Val Gln  
           210                  215                  220  
 Ala Val Asp Tyr Gly Asp Tyr Ile Tyr Phe Phe Phe Arg Glu Ile Ala  
           225                  230                  235                  240  
 Val Glu Tyr Asn Thr Met Gly Lys Val Val Phe Pro Arg Val Ala Gln  
                   245                  250                  255  
 Val Cys Lys Asn Asp Met Gly Gly Ser Gln Arg Val Leu Glu Lys Gln

260										265					270				
Trp	Thr	Ser	Phe	Leu	Lys	Ala	Arg	Leu	Asn	Cys	Ser	Val	Pro	Gly	Asp				
		275					280					285							
Ser	His	Phe	Tyr	Phe	Asn	Ile	Leu	Gln	Ala	Val	Thr	Asp	Val	Ile	Arg				
	290					295					300								
Ile	Asn	Gly	Arg	Asp	Val	Val	Leu	Ala	Thr	Phe	Ser	Thr	Pro	Tyr	Asn				
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Ser	Ile	Pro	Gly	Ser	Ala	Val	Cys	Ala	Tyr	Asp	Met	Leu	Asp	Ile	Ala				
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Ser	Val	Phe	Thr	Gly	Arg	Phe	Lys	Glu	Gln	Lys	Ser	Pro	Asp	Ser	Thr				
			340					345					350						
Trp	Thr	Pro	Val	Pro	Asp	Glu	Arg	Val	Pro	Lys	Pro	Arg	Pro	Gly	Cys				
		355					360					365							
Cys	Ala	Gly	Ser	Ser	Ser	Leu	Glu	Arg	Tyr	Ala	Thr	Ser	Asn	Glu	Phe				
	370					375					380								
Pro	Asp	Asp	Thr	Leu	Asn	Phe	Ile	Lys	Thr	His	Pro	Leu	Met	Asp	Glu				
385					390					395					400				
Ala	Val	Pro	Ser	Ile	Phe	Asn	Arg	Pro	Trp	Phe	Leu	Arg	Thr	Met	Val				
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Arg	Tyr	Arg	Leu	Thr	Lys	Ile	Ala	Val	Asp	Thr	Ala	Ala	Gly	Pro	Tyr				
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Gln	Asn	His	Thr	Val	Val	Phe	Leu	Gly	Ser	Glu	Lys	Gly	Ile	Ile	Leu				
		435					440					445							
Lys	Phe	Leu	Ala	Arg	Ile	Gly	Asn	Ser	Gly	Phe	Leu	Asn	Asp	Ser	Leu				
	450					455					460								
Phe	Leu	Glu	Glu	Met	Ser	Val	Tyr	Asn	Ser	Glu	Lys	Cys	Ser	Tyr	Asp				
465					470					475					480				
Gly	Val	Glu	Asp	Lys	Arg	Ile	Met	Gly	Met	Gln	Leu	Asp	Arg	Ala	Ser				
				485					490					495					
Ser	Ser	Leu	Tyr	Val	Ala	Phe	Ser	Thr	Cys	Val	Ile	Lys	Val	Pro	Leu				
			500					505					510						
Gly	Arg	Cys	Glu	Arg	His	Gly	Lys	Cys	Lys	Lys	Thr	Cys	Ile	Ala	Ser				
		515					520					525							
Arg	Asp	Pro	Tyr	Cys	Gly	Trp	Ile	Lys	Glu	Gly	Gly	Ala	Cys	Ser	His				
	530					535					540								
Leu	Ser	Pro	Asn	Ser	Arg	Leu	Thr	Phe	Glu	Gln	Asp	Ile	Glu	Arg	Gly				
545					550					555					560				
Asn	Thr	Asp	Gly	Leu	Gly	Asp	Cys	His	Asn	Ser	Phe	Val	Ala	Leu	Asn				

565										570					575				
Gly	His	Ser	Ser	Ser	Leu	Leu	Pro	Ser	Thr	Thr	Thr	Thr	Ser	Asp	Ser	Thr			
			580					585						590					
Ala	Gln	Glu	Gly	Tyr	Glu	Ser	Arg	Gly	Gly	Met	Leu	Asp	Trp	Lys	His				
		595					600					605							
Leu	Leu	Asp	Ser	Pro	Asp	Ser	Thr	Asp	Pro	Leu	Gly	Ala	Val	Ser	Ser				
	610					615					620								
His	Asn	His	Gln	Asp	Lys	Lys	Gly	Val	Ile	Arg	Glu	Ser	Tyr	Leu	Lys				
625					630					635					640				
Gly	His	Asp	Gln	Leu	Val	Pro	Val	Thr	Leu	Leu	Ala	Ile	Ala	Val	Ile				
				645					650					655					
Leu	Ala	Phe	Val	Met	Gly	Ala	Val	Phe	Ser	Gly	Ile	Thr	Val	Tyr	Cys				
			660					665					670						
Val	Cys	Asp	His	Arg	Arg	Lys	Asp	Val	Ala	Val	Val	Gln	Arg	Lys	Glu				
		675					680					685							
Lys	Glu	Leu	Thr	His	Ser	Arg	Arg	Gly	Ser	Met	Ser	Ser	Val	Thr	Lys				
	690					695					700								
Leu	Ser	Gly	Leu	Phe	Gly	Asp	Thr	Gln	Ser	Lys	Asp	Pro	Lys	Pro	Glu				
705					710						715				720				
Ala	Ile	Leu	Thr	Pro	Leu	Met	His	Asn	Gly	Lys	Leu	Ala	Thr	Pro	Gly				
				725					730					735					
Asn	Thr	Ala	Lys	Met	Leu	Ile	Lys	Ala	Asp	Gln	His	His	Leu	Asp	Leu				
			740					745					750						
Thr	Ala	Leu	Pro	Thr	Pro	Glu	Ser	Thr	Pro	Thr	Leu	Gln	Gln	Lys	Arg				
		755					760					765							
Lys	Pro	Ser	Arg	Gly	Ser	Arg	Glu	Trp	Glu	Arg	Asn	Gln	Asn	Leu	Ile				
	770					775					780								
Asn	Ala	Cys	Thr	Lys	Asp	Met	Pro	Pro	Met	Gly	Ser	Pro	Val	Ile	Pro				
785					790						795				800				
Thr	Asp	Leu	Pro	Leu	Arg	Ala	Ser	Pro	Ser	His	Ile	Pro	Ser	Val	Val				
				805					810					815					
Val	Leu	Pro	Ile	Thr	Gln	Gln	Gly	Tyr	Gln	His	Glu	Tyr	Val	Asp	Gln				
			820					825					830						
Pro	Lys	Met	Ser	Glu	Val	Ala	Gln	Met	Ala	Leu	Glu	Asp	Gln	Ala	Ala				
		835					840					845							
Thr	Leu	Glu	Tyr	Lys	Thr	Ile	Lys	Glu	His	Leu	Ser	Ser	Lys	Ser	Pro				
	850					855					860								
Asn	His	Gly	Val	Asn	Leu	Val	Glu	Asn	Leu	Asp	Ser	Leu	Pro	Pro	Lys				

865		870		875		880									
Val	Pro	Gln	Arg	Glu	Ala	Ser	Leu	Gly	Pro	Pro	Gly	Ala	Ser	Leu	Ser
				885					890					895	
Gln	Thr	Gly	Leu	Ser	Lys	Arg	Leu	Glu	Met	His	His	Ser	Ser	Ser	Tyr
			900					905						910	
Gly	Val	Asp	Tyr	Lys	Arg	Ser	Tyr	Pro	Thr	Asn	Ser	Leu	Thr	Arg	Ser
		915					920						925		
His	Gln	Ala	Thr	Thr	Leu	Lys	Arg	Asn	Asn	Thr	Asn	Ser	Ser	Asn	Ser
		930					935					940			
Ser	His	Leu	Ser	Arg	Asn	Gln	Ser	Phe	Gly	Arg	Gly	Asp	Asn	Pro	Pro
945						950				955					960
Pro	Ala	Pro	Gln	Arg	Val	Asp	Ser	Ile	Gln	Val	His	Ser	Ser	Gln	Pro
				965					970					975	
Ser	Gly	Gln	Ala	Val	Thr	Val	Ser	Arg	Gln	Pro	Ser	Leu	Asn	Ala	Tyr
			980					985					990		
Asn	Ser	Leu	Thr	Arg	Ser	Gly	Leu	Lys	Arg	Thr	Pro	Ser	Leu	Lys	Pro
		995					1000					1005			
Asp	Val	Pro	Pro	Lys	Pro	Ser	Phe	Ala	Pro	Leu	Ser	Thr	Ser	Met	Lys
	1010					1015					1020				
Pro	Asn	Asp	Ala	Cys	Thr										
1025					1030										

<210> 64  
 <211> 888  
 <212> PRT  
 <213> Homo sapiens

<400> 64
Met Arg Pro Ala Ala Leu Leu Leu Cys Leu Thr Leu Leu His Cys Ala
1 5 10 15
Gly Ala Gly Phe Pro Glu Asp Ser Glu Pro Ile Ser Ile Ser His Gly
20 25 30
Asn Tyr Thr Lys Gln Tyr Pro Val Phe Val Gly His Lys Pro Gly Arg
35 40 45
Asn Thr Thr Gln Arg His Arg Leu Asp Ile Gln Met Ile Met Ile Met
50 55 60
Asn Arg Thr Leu Tyr Val Ala Ala Arg Asp His Ile Tyr Thr Val Asp
65 70 75 80
Ile Asp Thr Ser His Thr Glu Glu Ile Tyr Cys Ser Lys Lys Leu Thr
85 90 95

Trp Lys Ser Arg Gln Ala Asp Val Asp Thr Cys Arg Met Lys Gly Lys  
 100 105 110  
 His Lys Asp Glu Cys His Asn Phe Ile Lys Val Leu Leu Lys Lys Asn  
 115 120 125  
 Asp Asp Thr Leu Phe Val Cys Gly Thr Asn Ala Phe Asn Pro Ser Cys  
 130 135 140  
 Arg Asn Tyr Arg Val Asp Thr Leu Glu Thr Phe Gly Asp Glu Phe Ser  
 145 150 155 160  
 Gly Met Ala Arg Cys Pro Tyr Asp Ala Lys His Ala Asn Ile Ala Leu  
 165 170 175  
 Phe Ala Asp Gly Lys Leu Tyr Ser Ala Thr Val Thr Asp Phe Leu Ala  
 180 185 190  
 Ile Asp Ala Val Ile Tyr Arg Ser Leu Gly Asp Ser Pro Thr Leu Arg  
 195 200 205  
 Thr Val Lys His Asp Ser Lys Trp Leu Lys Glu Pro Tyr Phe Val Gln  
 210 215 220  
 Ala Val Asp Tyr Gly Asp Tyr Ile Tyr Phe Phe Phe Arg Glu Ile Ala  
 225 230 235 240  
 Val Glu Tyr Asn Thr Met Gly Lys Val Val Phe Pro Arg Val Ala Gln  
 245 250 255  
 Val Cys Lys Asn Asp Met Gly Gly Ser Gln Arg Val Leu Glu Lys Gln  
 260 265 270  
 Trp Thr Ser Phe Leu Lys Ala Arg Leu Asn Cys Ser Val Pro Gly Asp  
 275 280 285  
 Ser His Phe Tyr Phe Asn Ile Leu Gln Ala Val Thr Asp Val Ile Arg  
 290 295 300  
 Ile Asn Gly Arg Asp Val Val Leu Ala Thr Phe Ser Thr Pro Tyr Asn  
 305 310 315 320  
 Ser Ile Pro Gly Ser Ala Val Cys Ala Tyr Asp Met Leu Asp Ile Ala  
 325 330 335  
 Asn Val Phe Thr Gly Arg Phe Lys Glu Gln Lys Ser Pro Asp Ser Thr  
 340 345 350  
 Trp Thr Pro Val Pro Asp Glu Arg Val Pro Lys Pro Arg Pro Gly Cys  
 355 360 365  
 Cys Ala Gly Ser Ser Ser Leu Glu Lys Tyr Ala Thr Ser Asn Glu Phe  
 370 375 380  
 Pro Asp Asp Thr Leu Asn Phe Ile Lys Thr His Pro Leu Met Asp Glu  
 385 390 395 400

Ala Val Pro Ser Ile Ile Asn Arg Pro Trp Phe Leu Arg Thr Met Val  
 405 410 415  
 Arg Tyr Arg Leu Thr Lys Ile Ala Val Asp Asn Ala Ala Gly Pro Tyr  
 420 425 430  
 Gln Asn His Thr Val Val Phe Leu Gly Ser Glu Lys Gly Ile Ile Leu  
 435 440 445  
 Lys Phe Leu Ala Arg Ile Gly Ser Ser Gly Phe Leu Asn Gly Ser Leu  
 450 455 460  
 Phe Leu Glu Glu Met Asn Val Tyr Asn Pro Glu Lys Cys Ser Tyr Asp  
 465 470 475 480  
 Gly Val Glu Asp Lys Arg Ile Met Gly Met Gln Leu Asp Arg Ala Ser  
 485 490 495  
 Gly Ser Leu Tyr Val Ala Phe Ser Thr Cys Val Ile Lys Val Pro Leu  
 500 505 510  
 Gly Arg Cys Glu Arg His Gly Lys Cys Lys Lys Thr Cys Ile Ala Ser  
 515 520 525  
 Arg Asp Pro Tyr Cys Gly Trp Val Arg Glu Ser Gly Ser Cys Ala His  
 530 535 540  
 Leu Ser Pro Leu Ser Arg Leu Thr Phe Glu Gln Asp Ile Glu Arg Gly  
 545 550 555 560  
 Asn Thr Asp Gly Leu Gly Asp Cys His Asn Ser Phe Val Ala Leu Asn  
 565 570 575  
 Gly His Ala Ser Ser Leu Tyr Pro Ser Thr Thr Thr Ser Asp Ser Ala  
 580 585 590  
 Ser Arg Asp Gly Tyr Glu Ser Arg Gly Gly Met Leu Asp Trp Asn Asp  
 595 600 605  
 Leu Leu Glu Ala Pro Gly Ser Thr Asp Pro Leu Gly Ala Val Ser Ser  
 610 615 620  
 His Asn His Gln Asp Lys Lys Gly Val Ile Arg Glu Ser Tyr Leu Lys  
 625 630 635 640  
 Ser Asn Asp Gln Leu Val Pro Val Thr Leu Leu Ala Ile Ala Val Ile  
 645 650 655  
 Leu Ala Phe Val Met Gly Ala Val Phe Ser Gly Ile Ile Val Tyr Cys  
 660 665 670  
 Val Cys Asp His Arg Arg Lys Asp Val Ala Val Val Gln Arg Lys Glu  
 675 680 685  
 Lys Glu Leu Thr His Ser Arg Arg Gly Ser Met Ser Ser Val Thr Lys  
 690 695 700



Leu Ser Gly Leu Phe Gly Asp Thr Gln Ser Lys Asp Pro Lys Pro Glu  
 705 710 715 720  
 Ala Ile Leu Thr Pro Leu Met His Asn Gly Lys Leu Ala Thr Pro Ser  
 725 730 735  
 Asn Thr Ala Lys Met Leu Ile Lys Ala Asp Gln His His Leu Asp Leu  
 740 745 750  
 Thr Ala Leu Pro Thr Pro Glu Ser Thr Pro Thr Leu Gln Glu Lys Arg  
 755 760 765  
 Lys Pro Asn Arg Gly Ser Arg Glu Trp Glu Arg Asn Gln Asn Ile Ile  
 770 775 780  
 Asn Ala Cys Thr Lys Asp Met Pro Pro Met Gly Ser Pro Val Ile Pro  
 785 790 795 800  
 Thr Asp Leu Pro Leu Arg Ala Ser Pro Ser His Ile Pro Ser Val Val  
 805 810 815  
 Val Leu Pro Ile Thr Gln Gln Gly Tyr Gln His Glu Tyr Val Asp Gln  
 820 825 830  
 Pro Lys Met Ser Glu Val Val Ala Gln Met Ala Leu Glu Asp Gln Ala  
 835 840 845  
 Ala Thr Leu Glu Tyr Lys Thr Ile Lys Glu His Leu Ser Ser Glu Ser  
 850 855 860  
 Ser Pro Tyr Val Leu Lys Gln Phe Ser Glu Ala Phe Asn Arg Gln Gly  
 865 870 875 880  
 Ile Ile Leu Ser Val Ala Val Glu  
 885

<210> 65  
 <211> 30  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:  
 oligonucleotide primer

<400> 65  
 gatctcccg aaaccctctg agccgaagg

30

<210> 66  
 <211> 18  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:

oligonucleotide primer

<400> 66  
ggcagcgccc tacacggt 18

<210> 67  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
oligonucleotide primer

<400> 67  
gatgagtgcg cgactggc 18

<210> 68  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
oligonucleotide primer

<400> 68  
cctcagcgtc cgcctcct 18

<210> 69  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
oligonucleotide primer

<400> 69  
cgcaatcatc cacatcttcg c 21

<210> 70  
<211> 703  
<212> PRT  
<213> Homo sapiens

<400> 70  
Pro Glu Glu Gln Pro His Val Gly Asn Tyr Arg Leu Leu Arg Thr Ile  
1 5 10 15

Gly Lys Gly Asn Phe Ala Lys Val Lys Leu Ala Arg His Ile Leu Thr  
20 25 30

Gly Arg Glu Val Ala Ile Lys Ile Ile Asp Lys Thr Gln Leu Asn Pro  
 35 40 45  
 Ser Ser Leu Gln Lys Leu Phe Arg Glu Val Arg Ile Met Lys Gly Leu  
 50 55 60  
 Asn His Pro Asn Ile Val Lys Leu Phe Glu Val Ile Glu Thr Glu Lys  
 65 70 75 80  
 Thr Leu Tyr Leu Val Met Glu Tyr Ala Ser Ala Gly Glu Val Phe Asp  
 85 90 95  
 Tyr Leu Val Ser His Gly Arg Met Lys Glu Lys Glu Ala Arg Ala Lys  
 100 105 110  
 Phe Arg Gln Ile Val Ser Ala Val His Tyr Cys His Gln Lys Asn Ile  
 115 120 125  
 Val His Arg Asp Leu Lys Ala Glu Asn Leu Leu Leu Asp Ala Glu Ala  
 130 135 140  
 Asn Ile Lys Ile Ala Asp Phe Gly Phe Ser Asn Glu Phe Thr Leu Gly  
 145 150 155 160  
 Ser Lys Leu Asp Thr Phe Cys Gly Ser Pro Pro Tyr Ala Ala Pro Glu  
 165 170 175  
 Leu Phe Gln Gly Lys Lys Tyr Asp Gly Pro Glu Val Asp Ile Trp Ser  
 180 185 190  
 Leu Gly Val Ile Leu Tyr Thr Leu Val Ser Gly Ser Leu Pro Phe Asp  
 195 200 205  
 Gly His Asn Leu Lys Glu Leu Arg Glu Arg Val Leu Arg Gly Lys Tyr  
 210 215 220  
 Arg Val Pro Phe Tyr Met Ser Thr Asp Cys Glu Ser Ile Leu Arg Arg  
 225 230 235 240  
 Phe Leu Val Leu Asn Pro Ala Lys Arg Cys Thr Leu Glu Gln Ile Met  
 245 250 255  
 Lys Asp Lys Trp Ile Asn Ile Gly Tyr Glu Gly Glu Glu Leu Lys Pro  
 260 265 270  
 Tyr Thr Glu Pro Glu Glu Asp Phe Gly Asp Thr Lys Arg Ile Glu Val  
 275 280 285  
 Met Val Gly Met Gly Tyr Thr Arg Glu Glu Ile Lys Glu Ser Leu Thr  
 290 295 300  
 Ser Gln Lys Tyr Asn Glu Val Thr Ala Thr Tyr Leu Leu Leu Gly Arg  
 305 310 315 320  
 Lys Thr Glu Glu Gly Gly Asp Arg Gly Ala Pro Gly Leu Ala Leu Ala  
 325 330 335

Arg Val Arg Ala Pro Ser Asp Thr Thr Asn Gly Thr Ser Ser Ser Lys  
 340 345 350  
 Gly Thr Ser His Ser Lys Gly Gln Arg Ser Ser Ser Ser Thr Tyr His  
 355 360 365  
 Arg Gln Arg Arg His Ser Asp Phe Cys Gly Pro Ser Pro Ala Pro Leu  
 370 375 380  
 His Pro Lys Arg Ser Pro Thr Ser Thr Gly Glu Ala Glu Leu Lys Glu  
 385 390 395 400  
 Glu Arg Leu Pro Gly Arg Lys Ala Ser Cys Ser Thr Ala Gly Ser Gly  
 405 410 415  
 Ser Arg Gly Leu Pro Pro Ser Ser Pro Met Val Ser Ser Ala His Asn  
 420 425 430  
 Pro Asn Lys Ala Glu Ile Pro Glu Arg Arg Lys Asp Ser Thr Ser Thr  
 435 440 445  
 Pro Asn Asn Leu Pro Pro Ser Met Met Thr Arg Arg Asn Thr Tyr Val  
 450 455 460  
 Cys Thr Glu Arg Pro Gly Ala Glu Arg Pro Ser Leu Leu Pro Asn Gly  
 465 470 475 480  
 Lys Glu Asn Ser Ser Gly Thr Pro Arg Val Pro Pro Ala Ser Pro Ser  
 485 490 495  
 Ser His Ser Leu Ala Pro Pro Ser Gly Glu Arg Ser Arg Leu Ala Arg  
 500 505 510  
 Gly Ser Thr Ile Arg Ser Thr Phe His Gly Gly Gln Val Arg Asp Arg  
 515 520 525  
 Arg Ala Gly Gly Gly Gly Gly Gly Gly Val Gln Asn Gly Pro Pro Ala  
 530 535 540  
 Ser Pro Thr Leu Ala His Glu Ala Ala Pro Leu Pro Ala Gly Arg Pro  
 545 550 555 560  
 Arg Pro Thr Thr Asn Leu Phe Thr Lys Leu Thr Ser Lys Leu Thr Arg  
 565 570 575  
 Arg Val Ala Asp Glu Pro Glu Arg Ile Gly Gly Pro Glu Val Thr Ser  
 580 585 590  
 Cys His Leu Pro Trp Asp Gln Thr Glu Thr Ala Pro Arg Leu Leu Arg  
 595 600 605  
 Phe Pro Trp Ser Val Lys Leu Thr Ser Ser Arg Pro Pro Glu Ala Leu  
 610 615 620  
 Met Ala Ala Leu Arg Gln Ala Thr Ala Ala Ala Arg Cys Arg Cys Arg  
 625 630 635 640

Gln Pro Gln Pro Phe Leu Leu Ala Cys Leu His Gly Gly Ala Gly Gly  
645 650 655

Pro Glu Pro Leu Ser His Phe Glu Val Glu Val Cys Gln Leu Pro Arg  
660 665 670

Pro Gly Leu Arg Gly Val Leu Phe Arg Arg Val Ala Gly Thr Ala Leu  
675 680 685

Ala Phe Arg Thr Leu Val Thr Arg Ile Ser Asn Asp Leu Glu Leu  
690 695 700

<210> 71  
<211> 639  
<212> PRT  
<213> Homo sapiens

<400> 71  
Pro Glu Glu Gln Pro His Val Gly Asn Tyr Arg Leu Leu Arg Thr Ile  
1 5 10 15

Gly Lys Gly Asn Phe Ala Lys Val Lys Leu Ala Arg His Ile Leu Thr  
20 25 30

Gly Arg Glu Val Ala Ile Lys Ile Ile Asp Lys Thr Gln Leu Asn Pro  
35 40 45

Ser Ser Leu Gln Lys Leu Phe Arg Glu Val Arg Ile Met Lys Gly Leu  
50 55 60

Asn His Pro Asn Ile Val Lys Leu Phe Glu Val Ile Glu Thr Glu Lys  
65 70 75 80

Thr Leu Tyr Leu Val Met Glu Tyr Ala Ser Ala Gly Glu Val Phe Asp  
85 90 95

Tyr Leu Val Ser His Gly Arg Met Lys Glu Lys Glu Ala Arg Ala Lys  
100 105 110

Phe Arg Gln Ile Val Ser Ala Val His Tyr Cys His Gln Lys Asn Ile  
115 120 125

Val His Arg Asp Leu Lys Ala Glu Asn Leu Leu Leu Asp Ala Glu Ala  
130 135 140

Asn Ile Lys Ile Ala Asp Phe Gly Phe Ser Asn Glu Phe Thr Leu Gly  
145 150 155 160

Ser Lys Leu Asp Thr Phe Cys Gly Ser Pro Pro Tyr Ala Ala Pro Glu  
165 170 175

Leu Phe Gln Gly Lys Lys Tyr Asp Gly Pro Glu Val Asp Ile Trp Ser  
180 185 190

Leu Gly Val Ile Leu Tyr Thr Leu Val Ser Gly Ser Leu Pro Phe Asp  
195 200 205

Gly His Asn Leu Lys Glu Leu Arg Glu Arg Val Leu Arg Gly Lys Tyr  
 210 215 220  
 Arg Val Pro Phe Tyr Met Ser Thr Asp Cys Glu Ser Ile Leu Arg Arg  
 225 230 235 240  
 Phe Leu Val Leu Asn Pro Ala Lys Arg Cys Thr Leu Glu Gln Ile Met  
 245 250 255  
 Lys Asp Lys Trp Ile Asn Ile Gly Tyr Glu Gly Glu Glu Leu Lys Pro  
 260 265 270  
 Tyr Thr Glu Pro Glu Glu Asp Phe Gly Asp Thr Lys Arg Ile Glu Val  
 275 280 285  
 Met Val Gly Met Gly Tyr Thr Arg Glu Glu Ile Lys Glu Ser Leu Thr  
 290 295 300  
 Ser Gln Lys Tyr Asn Glu Val Thr Ala Thr Tyr Leu Leu Leu Gly Arg  
 305 310 315 320  
 Lys Thr Glu Glu Gly Gly Asp Arg Gly Ala Pro Gly Leu Ala Leu Ala  
 325 330 335  
 Arg Val Arg Ala Pro Ser Asp Thr Thr Asn Gly Thr Ser Ser Ser Lys  
 340 345 350  
 Gly Thr Ser His Ser Lys Gly Gln Arg Ser Ser Ser Ser Thr Tyr His  
 355 360 365  
 Arg Gln Arg Arg His Ser Asp Phe Cys Gly Pro Ser Pro Ala Pro Leu  
 370 375 380  
 His Pro Lys Arg Ser Pro Thr Ser Thr Gly Glu Ala Glu Leu Lys Glu  
 385 390 395 400  
 Glu Arg Leu Pro Gly Arg Lys Ala Ser Cys Ser Thr Ala Gly Ser Gly  
 405 410 415  
 Ser Arg Gly Leu Pro Pro Ser Ser Pro Met Val Ser Ser Ala His Asn  
 420 425 430  
 Pro Asn Lys Ala Glu Ile Pro Glu Arg Arg Lys Asp Ser Thr Ser Thr  
 435 440 445  
 Pro Asn Asn Leu Pro Pro Ser Met Met Thr Arg Arg Asn Thr Tyr Val  
 450 455 460  
 Cys Thr Glu Arg Pro Gly Ala Glu Arg Pro Ser Leu Leu Pro Asn Gly  
 465 470 475 480  
 Lys Glu Asn Ser Ser Gly Thr Pro Arg Val Pro Pro Ala Ser Pro Ser  
 485 490 495  
 Ser His Ser Leu Ala Pro Pro Ser Gly Glu Arg Ser Arg Leu Ala Arg  
 500 505 510

Gly Ser Thr Ile Arg Ser Thr Phe His Gly Gly Gln Val Arg Asp Arg  
515 520 525

Arg Ala Gly Gly Gly Gly Gly Gly Gly Val Gln Asn Gly Pro Pro Ala  
530 535 540

Ser Pro Thr Leu Ala His Glu Ala Ala Pro Leu Pro Ala Gly Arg Pro  
545 550 555 560

Arg Pro Thr Thr Asn Leu Phe Thr Lys Leu Thr Ser Lys Leu Thr Arg  
565 570 575

Arg Val Thr Leu Asp Pro Ser Lys Arg Gln Asn Ser Asn Arg Cys Val  
580 585 590

Ser Gly Ala Ser Leu Pro Gln Gly Ser Lys Ile Arg Ser Gln Thr Asn  
595 600 605

Leu Arg Glu Ser Gly Asp Leu Arg Ser Gln Val Ala Ile Tyr Leu Gly  
610 615 620

Ile Lys Arg Lys Pro Pro Pro Gly Cys Ser Asp Ser Pro Gly Val  
625 630 635

<210> 72  
<211> 639  
<212> PRT  
<213> Homo sapiens

<400> 72  
Pro Glu Glu Gln Pro His Val Gly Asn Tyr Arg Leu Leu Arg Thr Ile  
1 5 10 15

Gly Lys Gly Asn Phe Ala Lys Val Lys Leu Ala Arg His Ile Leu Thr  
20 25 30

Gly Arg Glu Val Ala Ile Lys Ile Ile Asp Lys Thr Gln Leu Asn Pro  
35 40 45

Ser Ser Leu Gln Lys Leu Phe Arg Glu Val Arg Ile Met Lys Gly Leu  
50 55 60

Asn His Pro Asn Ile Val Lys Leu Phe Glu Val Ile Glu Thr Glu Lys  
65 70 75 80

Thr Leu Tyr Leu Val Met Glu Tyr Ala Ser Ala Gly Glu Val Phe Asp  
85 90 95

Tyr Leu Val Ser His Gly Arg Met Lys Glu Lys Glu Ala Arg Ala Lys  
100 105 110

Phe Arg Gln Ile Val Ser Ala Val His Tyr Cys His Gln Lys Asn Ile  
115 120 125

Val His Arg Asp Leu Lys Ala Glu Asn Leu Leu Leu Asp Ala Glu Ala





435                      440                      445  
 Pro Asn Asn Leu Pro Pro Ser Met Met Thr Arg Arg Asn Thr Tyr Val  
 450                      455                      460  
 Cys Thr Glu Arg Pro Gly Ala Glu Arg Pro Ser Leu Leu Pro Asn Gly  
 465                      470                      475                      480  
 Lys Glu Asn Ser Ser Gly Thr Pro Arg Val Pro Pro Ala Ser Pro Ser  
 485                      490                      495  
 Ser His Ser Leu Ala Pro Pro Ser Gly Glu Arg Ser Arg Leu Ala Arg  
 500                      505                      510  
 Gly Ser Thr Ile Arg Ser Thr Phe His Gly Gly Gln Val Arg Asp Arg  
 515                      520                      525  
 Arg Ala Gly Gly Gly Gly Gly Gly Gly Val Gln Asn Gly Pro Pro Ala  
 530                      535                      540  
 Ser Pro Thr Leu Ala His Glu Ala Ala Pro Leu Pro Ala Gly Arg Pro  
 545                      550                      555                      560  
 Arg Pro Thr Thr Asn Leu Phe Thr Lys Leu Thr Ser Lys Leu Thr Arg  
 565                      570                      575  
 Arg Val Thr Leu Asp Pro Ser Lys Arg Gln Asn Ser Asn Arg Cys Val  
 580                      585                      590  
 Ser Gly Ala Ser Leu Pro Gln Gly Ser Lys Ile Arg Ser Gln Thr Asn  
 595                      600                      605  
 Leu Arg Glu Ser Gly Asp Leu Arg Ser Gln Val Ala Ile Tyr Leu Gly  
 610                      615                      620  
 Ile Lys Arg Lys Pro Pro Pro Gly Cys Ser Asp Ser Pro Gly Val  
 625                      630                      635

<210> 73  
 <211> 639  
 <212> PRT  
 <213> Homo sapiens

<400> 73  
 Pro Glu Glu Gln Pro His Val Gly Asn Tyr Arg Leu Leu Arg Thr Ile  
 1                      5                      10                      15  
 Gly Lys Gly Asn Ser Ala Lys Val Lys Leu Ala Arg His Ile Leu Thr  
 20                      25                      30  
 Gly Arg Glu Val Ala Ile Lys Ile Ile Asp Lys Thr Gln Leu Asn Pro  
 35                      40                      45  
 Ser Ser Leu Gln Lys Leu Phe Arg Glu Val Arg Ile Met Lys Gly Leu  
 50                      55                      60

Asn	His	Pro	Asn	Ile	Val	Lys	Leu	Phe	Glu	Val	Ile	Glu	Thr	Glu	Lys	65	70	75	80
Thr	Leu	Tyr	Leu	Val	Met	Glu	Tyr	Ala	Ser	Ala	Gly	Glu	Val	Phe	Asp	85	90	95	
Tyr	Leu	Val	Ser	His	Gly	Arg	Met	Lys	Glu	Lys	Glu	Ala	Arg	Ala	Lys	100	105	110	
Phe	Arg	Gln	Ile	Val	Ser	Ala	Val	His	Tyr	Cys	His	Gln	Lys	Asn	Ile	115	120	125	
Val	His	Arg	Asp	Leu	Lys	Ala	Glu	Asn	Leu	Leu	Leu	Asp	Ala	Glu	Ala	130	135	140	
Asn	Ile	Lys	Ile	Ala	Asp	Phe	Gly	Phe	Ser	Asn	Glu	Phe	Thr	Leu	Gly	145	150	155	160
Ser	Lys	Leu	Asp	Thr	Phe	Cys	Gly	Ser	Pro	Pro	Tyr	Ala	Ala	Pro	Glu	165	170	175	
Leu	Phe	Gln	Gly	Lys	Lys	Tyr	Asp	Gly	Pro	Glu	Val	Asp	Ile	Trp	Ser	180	185	190	
Leu	Gly	Val	Ile	Leu	Tyr	Thr	Leu	Val	Ser	Gly	Ser	Leu	Pro	Phe	Asp	195	200	205	
Gly	His	Asn	Leu	Lys	Glu	Leu	Arg	Glu	Arg	Val	Leu	Arg	Gly	Lys	Tyr	210	215	220	
Arg	Val	Pro	Phe	Tyr	Met	Ser	Thr	Asp	Cys	Glu	Ser	Ile	Leu	Arg	Arg	225	230	235	240
Phe	Leu	Val	Leu	Asn	Pro	Ala	Lys	Arg	Cys	Thr	Leu	Glu	Gln	Ile	Met	245	250	255	
Lys	Asp	Lys	Trp	Ile	Asn	Ile	Gly	Tyr	Glu	Gly	Glu	Glu	Leu	Lys	Pro	260	265	270	
Tyr	Thr	Glu	Pro	Glu	Glu	Asp	Phe	Gly	Asp	Thr	Lys	Arg	Ile	Glu	Val	275	280	285	
Met	Val	Gly	Met	Gly	Tyr	Thr	Arg	Glu	Glu	Ile	Lys	Glu	Ser	Leu	Thr	290	295	300	
Ser	Gln	Lys	Tyr	Asn	Glu	Val	Thr	Ala	Thr	Tyr	Leu	Leu	Leu	Gly	Arg	305	310	315	320
Lys	Thr	Glu	Glu	Gly	Gly	Asp	Arg	Gly	Ala	Pro	Gly	Leu	Ala	Leu	Ala	325	330	335	
Arg	Val	Arg	Ala	Pro	Ser	Asp	Thr	Thr	Asn	Gly	Thr	Ser	Ser	Ser	Lys	340	345	350	
Gly	Thr	Ser	His	Ser	Lys	Gly	Gln	Arg	Ser	Ser	Ser	Ser	Thr	Tyr	His	355	360	365	

Arg Gln Arg Arg His Ser Asp Phe Cys Gly Pro Ser Pro Ala Pro Leu  
 370 375 380  
 His Pro Lys Arg Ser Pro Thr Ser Thr Gly Glu Ala Glu Leu Lys Glu  
 385 390 395 400  
 Glu Arg Leu Pro Gly Arg Lys Ala Ser Cys Ser Thr Ala Gly Ser Gly  
 405 410 415  
 Ser Arg Gly Leu Pro Pro Ser Ser Pro Met Val Ser Ser Ala His Asn  
 420 425 430  
 Pro Asn Lys Ala Glu Ile Pro Glu Arg Arg Lys Asp Ser Thr Ser Thr  
 435 440 445  
 Pro Asn Asn Leu Pro Pro Ser Met Met Thr Arg Arg Asn Thr Tyr Val  
 450 455 460  
 Cys Thr Glu Arg Pro Gly Ala Glu Arg Pro Ser Leu Leu Pro Asn Gly  
 465 470 475 480  
 Lys Glu Asn Ser Ser Gly Thr Pro Arg Val Pro Pro Ala Ser Pro Ser  
 485 490 495  
 Ser His Ser Leu Ala Pro Pro Ser Gly Glu Arg Ser Arg Leu Ala Arg  
 500 505 510  
 Gly Ser Thr Ile Arg Ser Thr Phe His Gly Gly Gln Val Arg Asp Arg  
 515 520 525  
 Arg Ala Gly Gly Gly Gly Gly Gly Gly Val Gln Asn Gly Pro Pro Ala  
 530 535 540  
 Ser Pro Thr Leu Ala His Glu Ala Ala Pro Leu Pro Ala Gly Arg Pro  
 545 550 555 560  
 Arg Pro Thr Thr Asn Leu Phe Thr Lys Leu Thr Ser Lys Leu Thr Arg  
 565 570 575  
 Arg Val Thr Leu Asp Pro Ser Lys Arg Gln Asn Ser Asn Arg Cys Val  
 580 585 590  
 Ser Gly Ala Ser Leu Pro Gln Gly Ser Lys Ile Arg Ser Gln Thr Asn  
 595 600 605  
 Leu Arg Glu Ser Gly Asp Leu Arg Ser Gln Val Ala Ile Tyr Leu Gly  
 610 615 620  
 Ile Lys Arg Lys Pro Pro Pro Gly Cys Ser Asp Ser Pro Gly Val  
 625 630 635

<210> 74  
 <211> 667  
 <212> PRT  
 <213> Homo sapiens

<400> 74

Ala	Asp	Glu	Gln	Pro	His	Ile	Gly	Asn	Tyr	Arg	Leu	Leu	Lys	Thr	Ile	1	5	10	15
Gly	Lys	Gly	Asn	Phe	Ala	Lys	Val	Lys	Leu	Ala	Arg	His	Ile	Leu	Thr	20	25	30	
Gly	Arg	Glu	Val	Ala	Ile	Lys	Ile	Ile	Asp	Lys	Thr	Gln	Leu	Asn	Pro	35	40	45	
Thr	Ser	Leu	Gln	Lys	Leu	Phe	Arg	Glu	Val	Arg	Ile	Met	Lys	Ile	Leu	50	55	60	
Asn	His	Pro	Asn	Ile	Val	Lys	Leu	Phe	Glu	Val	Ile	Glu	Thr	Gln	Lys	65	70	75	80
Thr	Leu	Tyr	Leu	Ile	Met	Glu	Tyr	Ala	Ser	Gly	Gly	Lys	Val	Phe	Asp	85	90	95	
Tyr	Leu	Val	Ala	His	Gly	Arg	Met	Lys	Glu	Lys	Glu	Ala	Arg	Ser	Lys	100	105	110	
Phe	Arg	Gln	Ile	Val	Ser	Ala	Val	Gln	Tyr	Cys	His	Gln	Lys	Arg	Ile	115	120	125	
Val	His	Arg	Asp	Leu	Lys	Ala	Glu	Asn	Leu	Leu	Leu	Asp	Ala	Asp	Met	130	135	140	
Asn	Ile	Lys	Ile	Ala	Asp	Phe	Gly	Phe	Ser	Asn	Glu	Phe	Thr	Val	Gly	145	150	155	160
Gly	Lys	Leu	Asp	Thr	Phe	Cys	Gly	Ser	Pro	Pro	Tyr	Ala	Ala	Pro	Glu	165	170	175	
Leu	Phe	Gln	Gly	Lys	Lys	Tyr	Asp	Gly	Pro	Glu	Val	Asp	Val	Trp	Ser	180	185	190	
Leu	Gly	Val	Ile	Leu	Tyr	Thr	Leu	Val	Ser	Gly	Ser	Leu	Pro	Phe	Asp	195	200	205	
Gly	Gln	Asn	Leu	Lys	Glu	Leu	Arg	Glu	Arg	Val	Leu	Arg	Gly	Lys	Tyr	210	215	220	
Arg	Ile	Pro	Phe	Tyr	Met	Ser	Thr	Asp	Cys	Glu	Asn	Leu	Leu	Lys	Arg	225	230	235	240
Phe	Leu	Val	Leu	Asn	Pro	Ile	Lys	Arg	Gly	Thr	Leu	Glu	Gln	Ile	Met	245	250	255	
Lys	Asp	Arg	Trp	Ile	Asn	Ala	Gly	His	Glu	Glu	Asp	Glu	Leu	Lys	Pro	260	265	270	
Phe	Val	Glu	Pro	Glu	Leu	Asp	Ile	Ser	Asp	Gln	Lys	Arg	Ile	Asp	Ile	275	280	285	
Met	Val	Gly	Met	Gly	Tyr	Ser	Gln	Glu	Glu	Ile	Gln	Glu	Ser	Leu	Ser	290	295	300	

Lys Met Lys Tyr Asp Glu Ile Thr Ala Thr Tyr Leu Leu Leu Gly Arg  
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 Lys Ser Ser Glu Val Arg Pro Ser Ser Asp Leu Asn Asn Ser Thr Gly  
 325 330 335  
 Gln Ser Pro His His Lys Val Gln Arg Ser Val Ser Ser Ser Gln Lys  
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 Gln Arg Arg Tyr Ser Asp His Ala Gly Pro Gly Ile Pro Ser Val Val  
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 Ala Tyr Pro Lys Arg Ser Gln Thr Ser Thr Ala Asp Ser Asp Leu Lys  
 370 375 380  
 Glu Asp Gly Ile Ser Ser Arg Lys Ser Thr Gly Ser Ala Val Gly Gly  
 385 390 395 400  
 Lys Gly Ile Ala Pro Ala Ser Pro Met Leu Gly Asn Ala Ser Asn Pro  
 405 410 415  
 Asn Lys Ala Asp Ile Pro Glu Arg Lys Lys Ser Ser Thr Val Pro Ser  
 420 425 430  
 Ser Asn Thr Ala Ser Gly Gly Met Thr Arg Arg Asn Thr Tyr Val Cys  
 435 440 445  
 Ser Glu Arg Thr Thr Asp Asp Arg His Ser Val Ile Gln Asn Gly Lys  
 450 455 460  
 Glu Asn Ser Thr Ile Pro Asp Gln Arg Thr Pro Val Ala Ser Thr His  
 465 470 475 480  
 Ser Ile Ser Ser Ala Ala Thr Pro Asp Arg Ile Arg Phe Pro Arg Gly  
 485 490 495  
 Thr Ala Ser Arg Ser Thr Phe His Gly Gln Pro Arg Glu Arg Arg Thr  
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 Ala Thr Tyr Asn Gly Pro Pro Ala Ser Pro Ser Leu Ser His Glu Ala  
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 Thr Pro Leu Ser Gln Thr Arg Ser Arg Gly Ser Thr Thr Leu Phe Ser  
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 Lys Leu Thr Ser Lys Leu Thr Arg Ser Arg Asn Val Ser Ala Lys Gln  
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 Lys Asp Glu Asn Lys Glu Ala Lys Pro Arg Ser Leu Arg Phe Thr Trp  
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 Ser Met Lys Thr Thr Ser Ser Met Asp Pro Gly Asp Met Met Arg Glu  
 580 585 590  
 Ile Arg Lys Val Leu Asp Ala Asn Asn Cys Asp Tyr Glu Gln Arg Glu  
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Arg Phe Leu Leu Phe Cys Val His Gly Asp Gly His Ala Glu Asn Leu  
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Val Gln Trp Glu Met Glu Val Cys Lys Leu Pro Arg Leu Ser Leu Asn  
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Gln Val Glu Arg Val Ser Gly Pro Trp Glu Glu Ala Asp Ala Glu Ala  
35 40 45

Val Ala Arg Ala Glu Ala Ala Ala Arg Ala Glu Ala Ala Ala Pro Tyr  
50 55 60

Thr Val Leu Ala Gln Ser Ala Pro Arg Glu Asp Gly Tyr Ser Asp Ala  
65 70 75 80

Ser Gly Phe Gly Tyr Cys Phe Arg Glu Leu Arg Gly Gly Glu Cys Ala  
85 90 95

Ser Pro Leu Pro Gly Leu Arg Thr Gln Glu Val Cys Cys Arg Gly Ala  
100 105 110

Gly Leu Ala Trp Gly Val His Asp Cys Gln Leu Cys Ser Glu Arg Leu  
115 120 125

Gly Asn Ser Glu Arg Val Ser Ala Pro Asp Gly Pro Cys Pro Thr Gly  
130 135 140

Phe Glu Arg Val Asn Gly Ser Cys Glu Asp Val Asp Glu Cys Ala Thr  
145 150 155 160

Gly Gly Arg Cys Gln His Gly Glu Cys Ala Asn Thr Arg Gly Gly Tyr  
165 170 175

Thr Cys Val Cys Pro Asp Gly Phe Leu Leu Asp Ser Ser Arg Ser Ser  
180 185 190

Cys Ile Ser Gln His Val Ile Ser Glu Ala Lys Gly Pro Cys Phe Arg

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Val	Leu	Arg	Asp	Gly	Gly	Cys	Ser	Leu	Pro	Ile	Leu	Arg	Asn	Ile	Thr
210						215					220				
Lys	Gln	Ile	Cys	Cys	Cys	Ser	Arg	Val	Gly	Lys	Ala	Trp	Gly	Arg	Gly
225					230					235					240
Cys	Gln	Leu	Cys	Pro	Pro	Phe	Gly	Ser	Glu	Gly	Phe	Arg	Glu	Ile	Cys
				245					250					255	
Pro	Ala	Gly	Pro	Gly	Tyr	His	Tyr	Ser	Ala	Ser	Asp	Leu	Arg	Tyr	Asn
			260					265					270		
Thr	Arg	Pro	Leu	Gly	Gln	Glu	Pro	Pro	Arg	Val	Ser	Leu	Ser	Gln	Pro
			275				280					285			
Arg	Thr	Leu	Pro	Ala	Thr	Ser	Arg	Pro	Ser	Ala	Gly	Phe	Leu	Pro	Thr
			290			295					300				
His	Arg	Leu	Glu	Pro	Arg	Pro	Glu	Pro	Arg	Pro	Asp	Pro	Arg	Pro	Gly
305					310					315					320
Pro	Glu	Leu	Pro	Leu	Pro	Ser	Ile	Pro	Ala	Trp	Thr	Gly	Pro	Glu	Ile
				325					330					335	
Pro	Glu	Ser	Gly	Pro	Ser	Ser	Gly	Met	Cys	Gln	Arg	Asn	Pro	Gln	Val
			340					345					350		
Cys	Gly	Pro	Gly	Arg	Cys	Ile	Ser	Arg	Pro	Ser	Gly	Tyr	Thr	Cys	Ala
			355				360					365			
Cys	Asp	Ser	Gly	Phe	Arg	Leu	Ser	Pro	Gln	Gly	Thr	Arg	Cys	Ile	Asp
			370			375					380				
Val	Asp	Glu	Cys	Arg	Arg	Val	Pro	Pro	Pro	Cys	Ala	Pro	Gly	Arg	Cys
385					390					395					400
Glu	Asn	Ser	Pro	Gly	Ser	Phe	Arg	Cys	Val	Cys	Gly	Pro	Gly	Phe	Arg
				405					410					415	
Ala	Gly	Pro	Arg	Ala	Ala	Glu	Cys	Leu	Asp	Val	Asp	Glu	Cys	His	Arg
			420					425					430		
Val	Pro	Pro	Pro	Cys	Asp	Leu	Gly	Arg	Cys	Glu	Asn	Thr	Pro	Gly	Ser
			435				440					445			
Phe	Leu	Cys	Val	Cys	Pro	Ala	Gly	Tyr	Gln	Ala	Ala	Pro	His	Gly	Ala
			450			455					460				
Ser	Cys	Gln	Asp	Val	Asp	Glu	Cys	Thr	Gln	Ser	Pro	Gly	Leu	Cys	Gly
465					470					475					480
Arg	Gly	Ala	Cys	Lys	Asn	Leu	Pro	Gly	Ser	Phe	Arg	Cys	Val	Cys	Pro
				485					490					495	
Ala	Gly	Phe	Arg	Gly	Ser	Ala	Cys	Glu	Glu	Asp	Val	Asp	Glu	Cys	Ala

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Gln	Glu	Pro	Pro	Pro	Cys	Gly	Pro	Gly	Arg	Cys	Asp	Asn	Thr	Ala	Gly
		515					520					525			
Ser	Phe	His	Cys	Ala	Cys	Pro	Ala	Gly	Phe	Arg	Ser	Arg	Gly	Pro	Gly
	530					535					540				
Ala	Pro	Cys	Gln	Asp	Val	Asp	Glu	Cys	Ala	Arg	Ser	Pro	Pro	Pro	Cys
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Thr	Tyr	Gly	Arg	Cys	Glu	Asn	Thr	Glu	Gly	Ser	Phe	Gln	Cys	Val	Cys
				565					570					575	
Pro	Met	Gly	Phe	Gln	Pro	Asn	Thr	Ala	Gly	Ser	Glu	Cys	Glu	Asp	Val
			580					585					590		
Asp	Glu	Cys	Glu	Asn	His	Leu	Ala	Cys	Pro	Gly	Gln	Glu	Cys	Val	Asn
		595					600					605			
Ser	Pro	Gly	Ser	Phe	Gln	Cys	Arg	Thr	Cys	Pro	Ser	Gly	His	His	Leu
	610					615					620				
His	Arg	Gly	Arg	Cys	Thr	Asp	Val	Asp	Glu	Cys	Ser	Ser	Gly	Ala	Pro
625					630					635					640
Pro	Cys	Gly	Pro	His	Gly	His	Cys	Thr	Asn	Thr	Glu	Gly	Ser	Phe	Arg
				645					650					655	
Cys	Ser	Cys	Ala	Pro	Gly	Tyr	Arg	Ala	Pro	Ser	Gly	Arg	Pro	Gly	Pro
			660					665					670		
Cys	Ala	Asp	Val	Asn	Glu	Cys	Leu	Glu	Gly	Asp	Phe	Cys	Phe	Pro	His
		675					680					685			
Gly	Glu	Cys	Leu	Asn	Thr	Asp	Gly	Ser	Phe	Ala	Cys	Thr	Cys	Ala	Pro
	690					695					700				
Gly	Tyr	Arg	Pro	Gly	Pro	Arg	Gly	Ala	Ser	Cys	Leu	Asp	Val	Asp	Glu
705					710					715					720
Cys	Ser	Glu	Glu	Asp	Leu	Cys	Gln	Ser	Gly	Ile	Cys	Thr	Asn	Thr	Asp
				725					730					735	
Gly	Ser	Phe	Glu	Cys	Ile	Cys	Pro	Pro	Gly	His	Arg	Ala	Gly	Pro	Asp
			740					745					750		
Leu	Ala	Ser	Cys	Leu	Asp	Val	Asp	Glu	Cys	Arg	Glu	Arg	Gly	Pro	Ala
		755					760					765			
Leu	Cys	Gly	Ser	Gln	Arg	Cys	Glu	Asn	Ser	Pro	Gly	Ser	Tyr	Arg	Cys
	770					775					780				
Val	Arg	Asp	Cys	Asp	Pro	Gly	Tyr	His	Ala	Gly	Pro	Glu	Gly	Thr	Cys
785					790					795					800
Asp	Asp	Val	Asp	Glu	Cys	Gln	Glu	Tyr	Gly	Pro	Glu	Ile	Cys	Gly	Ala





Phe Arg Glu Leu Arg Gly Gly Glu Cys Ala Ser Pro Leu Pro Gly Leu  
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Arg Thr Gln Glu Val Cys Cys Arg Gly Ala Gly Leu Ala Trp Gly Val  
195 200 205  
His Asp Cys Gln Leu Cys Ser Glu Arg Leu Gly Asn Ser Glu Arg Val  
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Ser Ala Pro Asp Gly Pro Cys Pro Thr Gly Phe Glu Arg Val Asn Gly  
225 230 235 240  
Ser Cys Glu Asp Val Asp Glu Cys Ala Thr Gly Gly Arg Cys Gln His  
245 250 255  
Gly Glu Cys Ala Asn Thr Arg Gly Gly Tyr Thr Cys Val Cys Pro Asp  
260 265 270  
Gly Phe Leu Leu Asp Ser Ser Arg Ser Ser Cys Ile Ser Gln His Val  
275 280 285  
Ile Ser Glu Ala Lys Gly Pro Cys Phe Arg Val Leu Arg Asp Gly Gly  
290 295 300  
Cys Ser Leu Pro Ile Leu Arg Asn Ile Thr Lys Gln Ile Cys Cys Cys  
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Phe Gly Ser Glu Gly Phe Arg Glu Ile Cys Pro Ala Gly Pro Gly Tyr  
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His Tyr Ser Ala Ser Asp Leu Arg Tyr Asn Thr Arg Pro Leu Gly Gln  
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Glu Pro Pro Arg Val Ser Leu Ser Gln Pro Arg Thr Leu Pro Ala Thr  
370 375 380  
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385 390 395 400  
Pro Glu Pro Arg Pro Asp Pro Arg Pro Gly Pro Glu Phe Pro Leu Pro  
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Val Pro Pro Pro Cys Ala Pro Gly Arg Cys Glu Asn Ser Pro Gly Ser  
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Phe Arg Cys Val Cys Gly Pro Gly Phe Arg Ala Gly Pro Arg Ala Ala  
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Glu Cys Leu Asp Val Asp Glu Cys His Arg Val Pro Pro Pro Cys Asp  
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565 570 575  
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Ala Cys Glu Glu Asp Val Asp Glu Cys Ala Gln Glu Pro Pro Pro Cys  
595 600 605  
Gly Pro Gly Arg Cys Asp Asn Thr Ala Gly Ser Phe His Cys Ala Cys  
610 615 620  
Pro Ala Gly Phe Arg Ser Arg Gly Pro Gly Ala Pro Cys Gln Asp Val  
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Asp Glu Cys Ala Arg Ser Pro Pro Pro Cys Thr Tyr Gly Arg Cys Glu  
645 650 655  
Asn Thr Glu Gly Ser Phe Gln Cys Val Cys Pro Met Gly Phe Gln Pro  
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675 680 685  
Leu Ala Cys Pro Gly Gln Glu Cys Val Asn Ser Pro Gly Ser Phe Gln  
690 695 700  
Cys Arg Ala Cys Pro Ser Gly His His Leu His Arg Gly Arg Cys Thr  
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Asp Val Asp Glu Cys Ser Ser Gly Ala Pro Pro Cys Gly Pro His Gly  
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His Cys Thr Asn Thr Glu Gly Ser Phe Arg Cys Ser Cys Ala Pro Gly  
740 745 750  
Tyr Arg Ala Pro Ser Gly Arg Pro Gly Pro Cys Ala Asp Val Asn Glu  
755 760 765  
Cys Leu Glu Gly Asp Phe Cys Phe Pro His Gly Glu Cys Leu Asn Thr  
770 775 780

Asp Gly Ser Phe Ala Cys Thr Cys Ala Pro Gly Tyr Arg Pro Gly Pro  
 785 790 795 800  
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 Val Asp Glu Cys Arg Glu Arg Gly Pro Ala Leu Cys Gly Ser Gln Arg  
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 Cys Glu Asn Ser Pro Gly Ser Tyr Arg Cys Val Arg Asp Cys Asp Pro  
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 Gly Tyr His Ala Gly Pro Glu Gly Thr Cys Asp Asp Val Asp Glu Cys  
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 Gln Glu Tyr Gly Pro Glu Ile Cys Gly Ala Gln Arg Cys Glu Asn Thr  
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Thr Trp Gln Glu Cys Cys Cys Thr Val Gly Glu Gly Trp Gly Ser Gly  
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 Cys Arg Ile Gln Gln Cys Pro Gly Thr Glu Thr Ala Glu Tyr Gln Ser  
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 1125 1130 1135  
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 Lys Ser Gly Val Cys Val Asn Thr Ala Pro Gly Tyr Ser Cys Tyr Cys  
 1155 1160 1165  
 Ser Asn Gly Tyr Tyr Tyr His Thr Gln Arg Leu Glu Cys Ile Asp Asn  
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 Asp Glu Cys Ala Asp Glu Glu Pro Ala Cys Glu Gly Gly Arg Cys Val  
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 Asn Thr Val Gly Ser Tyr His Cys Thr Cys Glu Pro Pro Leu Val Leu  
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 Ser His Pro Arg Leu Asp Arg Gln Ala Thr Tyr Thr Glu Cys Cys Cys  
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 Ala Pro Pro Gly Pro Gly Thr Arg Trp Pro Tyr Arg Ser Arg Asp Thr  
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Arg Arg Ser Phe Pro Glu Pro Glu Glu Pro Pro Glu Gly Gly Ser Tyr  
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Gly Ile Leu Asp Gly Cys Thr Asn Gly Arg Cys Val Arg Val Pro Glu  
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Gly Phe Thr Cys Arg Cys Phe Asp Gly Tyr Arg Leu Asp Met Thr Arg  
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Met Ala Cys Val Asp Ile Asn Glu Cys Asp Glu Ala Glu Ala Ala Ser  
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Pro Leu Cys Val Asn Ala Arg Cys Leu Asn Thr Asp Gly Ser Phe Arg  
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Arg Cys Leu Asn Pro Val Pro Ala Val Pro Ser Pro Ser Pro Ser Val  
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Arg Lys Arg Gln Val Ser Leu Asn Trp Gln Pro Leu Thr Leu Gln Glu  
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Ala Arg Ala Leu Leu Lys Arg Arg Arg Pro Arg Gly Pro Gly Gly Arg  
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Gly Leu Leu Arg Arg Arg Pro Pro Gln Arg Ala Pro Ala Gly Lys Ala  
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Pro Val Leu Cys Pro Leu Ile Cys His Asn Gly Gly Val Cys Val Lys  
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Pro Asp Arg Cys Phe Cys Pro Pro Asp Phe Ala Gly Lys Phe Cys Gln  
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Leu His Ser Ser Gly Ala Arg Pro Pro Ala Pro Ala Val Pro Gly Leu  
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 Thr Arg Ser Val Tyr Thr Met Pro Leu Ala Asn His Arg Asp Asp Glu  
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 His Gly Val Ala Ser Met Val Ser Val His Val Glu His Pro Gln Glu  
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 Ala Ser Val Val Val His Gln Val Glu Arg Val Ser Gly Pro Trp Glu  
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 Glu Ala Asp Ala Glu Ala Val Ala Arg Ala Glu Ala Ala Ala Arg Ala  
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 Glu Ala Ala Ala Pro Tyr Thr Val Leu Ala Gln Ser Ala Pro Arg Glu  
 225 230 235 240  
 Asp Gly Tyr Ser Asp Ala Ser Gly Phe Gly Tyr Cys Phe Arg Glu Leu  
 245 250 255  
 Arg Gly Gly Glu Cys Ala Ser Pro Leu Pro Gly Leu Arg Thr Gln Glu  
 260 265 270  
 Val Cys Cys Arg Gly Ala Gly Leu Ala Trp Gly Val His Asp Cys Gln  
 275 280 285  
 Leu Cys Ser Glu Arg Leu Gly Asn Ser Glu Arg Val Ser Ala Pro Asp  
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 Gly Pro Cys Pro Thr Gly Phe Glu Arg Val Asn Gly Ser Cys Glu Asp  
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 Asn Thr Arg Gly Gly Tyr Thr Cys Val Cys Pro Asp Gly Phe Leu Leu  
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 Asp Ser Ser Arg Ser Ser Cys Ile Ser Gln His Val Ile Ser Glu Ala  
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 Lys Gly Pro Cys Phe Arg Val Leu Arg Asp Gly Gly Cys Ser Leu Pro  
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 Ser Asp Leu Arg Tyr Asn Thr Arg Pro Leu Gly Gln Glu Pro Pro Arg  
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Val Ser Leu Ser Gln Pro Arg Thr Leu Pro Ala Thr Ser Arg Pro Ser  
450 455 460  
Ala Gly Phe Leu Pro Thr His Arg Leu Glu Pro Arg Pro Glu Pro Arg  
465 470 475 480  
Pro Asp Pro Arg Pro Gly Pro Glu Leu Pro Leu Pro Ser Ile Pro Ala  
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Trp Thr Gly Pro Glu Ile Pro Glu Ser Gly Pro Ser Ser Gly Met Cys  
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Gln Arg Asn Pro Gln Val Cys Gly Pro Gly Arg Cys Ile Ser Arg Pro  
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Ser Gly Tyr Thr Cys Ala Cys Asp Ser Gly Phe Arg Leu Ser Pro Gln  
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Gly Thr Arg Cys Ile Asp Val Asp Glu Cys Arg Arg Val Pro Pro Pro  
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565 570 575  
Cys Gly Pro Gly Phe Arg Ala Gly Pro Arg Ala Ala Glu Cys Leu Asp  
580 585 590  
Val Asp Glu Cys His Arg Val Pro Pro Pro Cys Asp Leu Gly Arg Cys  
595 600 605  
Glu Asn Thr Pro Gly Ser Phe Leu Cys Val Cys Pro Ala Gly Tyr Gln  
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Ala Ala Pro His Gly Ala Ser Cys Gln Asp Val Asp Glu Cys Thr Gln  
625 630 635 640  
Ser Pro Gly Leu Cys Gly Arg Gly Gly Cys Lys Asn Leu Pro Gly Ser  
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Phe Arg Cys Val Cys Pro Ala Gly Phe Arg Gly Ser Ala Cys Glu Glu  
660 665 670  
Asp Val Asp Glu Cys Ala Gln Glu Pro Pro Pro Cys Gly Pro Gly Arg  
675 680 685  
Cys Asp Asn Thr Ala Gly Ser Phe His Cys Ala Cys Pro Ala Gly Phe  
690 695 700  
Arg Ser Arg Gly Pro Gly Ala Pro Cys Gln Asp Val Asp Glu Cys Ala  
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Arg Ser Pro Pro Pro Cys Thr Tyr Gly Arg Cys Glu Asn Thr Glu Gly  
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Ser Phe Gln Cys Val Cys Pro Met Gly Phe Gln Pro Asn Thr Ala Gly  
740 745 750



Ser Glu Cys Glu Asp Val Asp Glu Cys Glu Asn His Leu Ala Cys Pro  
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 Pro Gly Ser Tyr Arg Cys Val Arg Asp Cys Asp Pro Gly Tyr His Ala  
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 Arg Pro Pro Pro Pro Leu Ser Arg Arg Pro Arg Lys Pro Arg Lys  
 1125 1130 1135  
 Gly Pro Val Gly Ser Gly Cys Arg Glu Cys Tyr Phe Asp Thr Ala Ala  
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 Pro Asp Ala Cys Asp Asn Ile Leu Ala Arg Asn Val Thr Trp Gln Glu  
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 Asp Glu Glu Pro Ala Cys Glu Gly Gly Arg Cys Val Asn Thr Val Gly  
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 1345 1350 1355 1360

Phe Glu Ala Leu Cys Asn Val Leu Arg Pro Pro Ala Tyr Ser Pro Pro  
1365 1370 1375

Arg Pro Gly Gly Phe Gly Leu Pro Tyr Glu Tyr Gly Pro Asp Leu Gly  
1380 1385 1390

Pro Pro Tyr Gln Gly Leu Pro Tyr Gly Pro Glu Leu Tyr Pro Pro Pro  
1395 1400 1405

Ala Leu Pro Tyr Asp Pro Tyr Pro Pro Pro Gly Pro Phe Ala Arg  
1410 1415 1420

Arg Glu Ala Pro Tyr Gly Ala Pro Arg Phe Asp Met Pro Asp Phe Glu  
1425 1430 1435 1440

Asp Asp Gly Gly Pro Tyr Gly Glu Ser Glu Ala Pro Ala Pro Pro Gly  
1445 1450 1455

Pro Gly Thr Arg Trp Pro Tyr Arg Ser Arg Asp Thr Arg Arg Ser Phe  
1460 1465 1470

Pro Glu Pro Glu Glu Pro Pro Glu Gly Gly Ser Tyr Ala Gly Ser Leu  
1475 1480 1485

Ala Glu Pro Tyr Glu Glu Leu Glu Ala Glu Glu Cys Gly Ile Leu Asp  
1490 1495 1500

Gly Cys Thr Asn Asp Arg Cys Val Arg Val Pro Glu Gly Phe Thr Cys  
1505 1510 1515 1520

Arg Cys Phe Asp Gly Tyr Arg Leu Asp Met Thr Arg Met Ala Cys Val  
1525 1530 1535

Asp Ile Asn Glu Cys Asp Glu Ala Glu Ala Ala Ser Pro Leu Cys Val  
1540 1545 1550

Asn Ala Arg Cys Leu Asn Thr Asp Gly Ser Phe Arg Cys Ile Cys Arg  
1555 1560 1565

Pro Gly Phe Ala Pro Thr His Gln Pro His His Cys Ala Pro Ala Arg  
1570 1575 1580

Pro Arg Ala  
1585

<210> 78  
<211> 775  
<212> PRT  
<213> Homo sapiens

<400> 78  
Met Pro Leu Ala Asn His Arg Asp Asp Glu His Gly Val Ala Ser Met  
1 5 10 15

Val Ser Val His Val Glu His Pro Gln Glu Ala Ser Val Val Val His

20					25					30					
Gln	Val	Glu	Arg	Val	Ser	Gly	Pro	Trp	Glu	Glu	Ala	Asp	Ala	Glu	Ala
	35					40						45			
Val	Ala	Arg	Ala	Glu	Ala	Ala	Ala	Arg	Ala	Glu	Ala	Ala	Ala	Pro	Tyr
	50					55					60				
Thr	Val	Leu	Ala	Gln	Ser	Ala	Pro	Arg	Glu	Asp	Gly	Tyr	Ser	Asp	Ala
	65					70					75				80
Ser	Gly	Phe	Gly	Tyr	Cys	Phe	Arg	Glu	Leu	Arg	Gly	Gly	Glu	Cys	Ala
				85					90					95	
Ser	Pro	Leu	Pro	Gly	Leu	Arg	Thr	Gln	Glu	Val	Cys	Cys	Arg	Gly	Ala
			100					105					110		
Gly	Leu	Ala	Trp	Gly	Val	His	Asp	Cys	Gln	Leu	Cys	Ser	Glu	Arg	Leu
	115						120					125			
Gly	Asn	Ser	Glu	Arg	Val	Ser	Ala	Pro	Asp	Gly	Pro	Cys	Pro	Thr	Gly
	130					135					140				
Phe	Glu	Arg	Val	Asn	Gly	Ser	Cys	Glu	Asp	Val	Asp	Glu	Cys	Ala	Thr
	145					150					155				160
Gly	Gly	Arg	Cys	Gln	His	Gly	Glu	Cys	Ala	Asn	Thr	Arg	Gly	Gly	Tyr
				165					170					175	
Thr	Cys	Val	Cys	Pro	Asp	Gly	Phe	Leu	Leu	Asp	Ser	Ser	Arg	Ser	Ser
			180					185					190		
Cys	Ile	Ser	Gln	His	Val	Ile	Ser	Glu	Ala	Lys	Gly	Pro	Cys	Phe	Arg
	195					200						205			
Val	Leu	Arg	Asp	Gly	Gly	Cys	Ser	Leu	Pro	Ile	Leu	Arg	Asn	Ile	Thr
	210					215					220				
Lys	Gln	Ile	Cys	Cys	Cys	Ser	Arg	Val	Gly	Lys	Ala	Trp	Gly	Arg	Gly
	225					230					235				240
Cys	Gln	Leu	Cys	Pro	Pro	Phe	Gly	Ser	Glu	Gly	Phe	Arg	Glu	Ile	Cys
				245					250					255	
Pro	Ala	Gly	Pro	Gly	Tyr	His	Tyr	Ser	Ala	Ser	Asp	Leu	Arg	Tyr	Asn
			260					265					270		
Thr	Arg	Pro	Leu	Gly	Gln	Glu	Pro	Pro	Arg	Val	Ser	Leu	Ser	Gln	Pro
			275				280					285			
Arg	Thr	Leu	Pro	Ala	Thr	Ser	Arg	Pro	Ser	Ala	Gly	Phe	Leu	Pro	Thr
	290					295					300				
His	Arg	Leu	Glu	Pro	Arg	Pro	Glu	Pro	Arg	Pro	Asp	Pro	Arg	Pro	Gly
	305					310					315				320
Pro	Glu	Leu	Pro	Leu	Pro	Ser	Ile	Pro	Ala	Trp	Thr	Gly	Pro	Glu	Ile

325										330					335				
Pro	Glu	Ser	Gly	Pro	Ser	Ser	Gly	Met	Cys	Gln	Arg	Asn	Pro	Gln	Val				
			340					345					350						
Cys	Gly	Pro	Gly	Arg	Cys	Ile	Ser	Arg	Pro	Ser	Gly	Tyr	Thr	Cys	Ala				
		355					360					365							
Cys	Asp	Ser	Gly	Phe	Arg	Leu	Ser	Pro	Gln	Gly	Thr	Arg	Cys	Ile	Asp				
	370					375					380								
Val	Asp	Glu	Cys	Arg	Arg	Val	Pro	Pro	Pro	Cys	Ala	Pro	Gly	Arg	Cys				
385					390					395					400				
Glu	Asn	Ser	Pro	Gly	Ser	Phe	Arg	Cys	Val	Cys	Gly	Pro	Gly	Phe	Arg				
				405					410					415					
Ala	Gly	Pro	Arg	Ala	Ala	Glu	Cys	Leu	Asp	Val	Asp	Glu	Cys	His	Arg				
			420					425					430						
Val	Pro	Pro	Pro	Cys	Asp	Leu	Gly	Arg	Cys	Glu	Asn	Thr	Pro	Gly	Ser				
	435						440					445							
Phe	Leu	Cys	Val	Cys	Pro	Ala	Gly	Tyr	Gln	Ala	Ala	Pro	His	Gly	Ala				
	450					455					460								
Ser	Cys	Gln	Asp	Val	Asp	Glu	Cys	Thr	Gln	Ser	Pro	Gly	Leu	Cys	Gly				
465					470					475					480				
Arg	Gly	Ala	Cys	Lys	Asn	Leu	Pro	Gly	Ser	Phe	Arg	Cys	Val	Cys	Pro				
				485					490					495					
Ala	Gly	Phe	Arg	Gly	Ser	Ala	Cys	Glu	Glu	Asp	Val	Asp	Glu	Cys	Ala				
			500					505					510						
Gln	Glu	Pro	Pro	Pro	Cys	Gly	Pro	Gly	Arg	Cys	Asp	Asn	Thr	Ala	Gly				
		515					520					525							
Ser	Phe	His	Cys	Ala	Cys	Pro	Ala	Gly	Phe	Arg	Ser	Arg	Gly	Pro	Gly				
	530					535					540								
Ala	Pro	Cys	Gln	Asp	Val	Asp	Glu	Cys	Ala	Arg	Ser	Pro	Pro	Pro	Cys				
545					550					555					560				
Thr	Tyr	Gly	Arg	Cys	Glu	Asn	Thr	Glu	Gly	Ser	Phe	Gln	Cys	Val	Cys				
				565					570					575					
Pro	Met	Gly	Phe	Gln	Pro	Asn	Thr	Ala	Gly	Ser	Glu	Cys	Glu	Asp	Val				
			580					585					590						
Asp	Glu	Cys	Glu	Asn	His	Leu	Ala	Cys	Pro	Gly	Gln	Glu	Cys	Val	Asn				
		595					600					605							
Ser	Pro	Gly	Ser	Phe	Gln	Cys	Arg	Thr	Cys	Pro	Ser	Gly	His	His	Leu				
	610					615					620								
His	Arg	Gly	Arg	Cys	Thr	Asp	Val	Asp	Glu	Cys	Ser	Ser	Gly	Ala	Pro				

625		630		635		640
Pro Cys Gly Pro His Gly His Cys Thr Asn Thr Glu Gly Ser Phe Arg						
		645		650		655
Cys Ser Cys Ala Pro Gly Tyr Arg Ala Pro Ser Gly Arg Pro Gly Pro						
		660		665		670
Cys Ala Asp Val Asn Glu Cys Leu Glu Gly Asp Phe Cys Phe Pro His						
		675		680		685
Gly Glu Cys Leu Asn Thr Asp Gly Ser Phe Ala Cys Thr Cys Ala Pro						
		690		695		700
Gly Tyr Arg Pro Gly Pro Arg Gly Ala Ser Cys Leu Asp Val Asp Glu						
		705		710		715
Cys Ser Glu Glu Asp Leu Cys Gln Ser Gly Ile Cys Thr Asn Thr Asp						
		725		730		735
Gly Ser Phe Glu Cys Ile Cys Pro Pro Gly His Arg Ala Gly Pro Asp						
		740		745		750
Leu Ala Ser Cys Leu Gly Arg Gly Arg Met Ser Arg Ala Arg Pro Ser						
		755		760		765
Pro Val Arg Val Ala Ala Leu						
		770		775		

<210> 79  
 <211> 669  
 <212> PRT  
 <213> Homo sapiens

<400> 79
Arg Gly Pro Met Gly Phe Gln Pro Asn Ala Ala Gly Ser Glu Cys Glu
1 5 10 15
Asp Val Asp Glu Cys Glu Asn His Leu Ala Cys Pro Gly Gln Glu Cys
20 25 30
Val Asn Ser Pro Gly Ser Phe Gln Cys Arg Ala Cys Pro Ser Gly His
35 40 45
His Leu His Arg Gly Arg Cys Thr Asp Val Asp Glu Cys Ser Ser Gly
50 55 60
Ala Pro Pro Cys Gly Pro His Gly His Cys Thr Asn Thr Glu Gly Ser
65 70 75 80
Phe Arg Cys Ser Cys Ala Pro Gly Tyr Arg Ala Pro Ser Gly Arg Pro
85 90 95
Gly Pro Cys Ala Asp Val Asn Glu Cys Leu Glu Gly Asp Phe Cys Phe
100 105 110

Pro His Gly Glu Cys Leu Asn Thr Asp Gly Ser Phe Ala Cys Thr Cys  
 115 120 125  
 Ala Pro Gly Tyr Arg Pro Gly Pro Arg Gly Ala Ser Cys Leu Asp Val  
 130 135 140  
 Asp Glu Cys Ser Glu Glu Asp Leu Cys Gln Ser Gly Ile Cys Thr Asn  
 145 150 155 160  
 Thr Asp Gly Ser Phe Glu Cys Ile Cys Pro Pro Gly His Arg Ala Gly  
 165 170 175  
 Pro Asp Leu Ala Ser Cys Leu Asp Val Asp Glu Cys Arg Glu Arg Gly  
 180 185 190  
 Pro Ala Leu Cys Gly Ser Gln Arg Cys Glu Asn Ser Pro Gly Ser Tyr  
 195 200 205  
 Arg Cys Val Arg Asp Cys Asp Pro Gly Tyr His Ala Gly Pro Glu Gly  
 210 215 220  
 Thr Cys Asp Asp Val Asn Glu Cys Glu Thr Leu Gln Gly Val Cys Gly  
 225 230 235 240  
 Ala Ala Leu Cys Glu Asn Val Glu Gly Ser Phe Leu Cys Val Cys Pro  
 245 250 255  
 Asn Ser Pro Glu Glu Phe Asp Pro Met Thr Gly Arg Cys Val Pro Pro  
 260 265 270  
 Arg Thr Ser Ala Gly Met Phe Pro Gly Ser Gln Pro Gln Ala Pro Ala  
 275 280 285  
 Ser Pro Val Leu Pro Ala Arg Pro Pro Pro Pro Leu Pro Arg Arg  
 290 295 300  
 Pro Ser Thr Pro Arg Gln Gly Pro Val Gly Ser Gly Arg Arg Glu Cys  
 305 310 315 320  
 Tyr Phe Asp Thr Ala Ala Pro Asp Ala Cys Asp Asn Ile Leu Ala Arg  
 325 330 335  
 Asn Val Thr Trp Gln Glu Cys Cys Cys Thr Val Gly Glu Gly Trp Gly  
 340 345 350  
 Ser Gly Cys Arg Ile Gln Gln Cys Pro Gly Thr Glu Thr Ala Glu Tyr  
 355 360 365  
 Gln Ser Leu Cys Pro His Gly Arg Gly Tyr Leu Ala Pro Ser Gly Asp  
 370 375 380  
 Leu Ser Leu Arg Arg Asp Val Asp Glu Cys Gln Leu Phe Arg Asp Gln  
 385 390 395 400  
 Val Cys Lys Ser Gly Val Cys Val Asn Thr Ala Pro Gly Tyr Ser Cys  
 405 410 415

Tyr Cys Ser Asn Gly Tyr Tyr Tyr His Thr Gln Arg Leu Glu Cys Ile  
 420 425 430  
 Asp Asn Asp Glu Cys Ala Asp Glu Glu Pro Ala Cys Glu Gly Gly Arg  
 435 440 445  
 Cys Val Asn Thr Val Gly Ser Tyr His Cys Thr Cys Glu Pro Pro Leu  
 450 455 460  
 Val Leu Asp Gly Ser Gln Arg Arg Cys Val Ser Asn Glu Ser Gln Ser  
 465 470 475 480  
 Leu Asp Asp Asn Leu Gly Val Cys Trp Gln Glu Val Gly Ala Asp Leu  
 485 490 495  
 Val Cys Ser His Pro Arg Leu Asp Arg Gln Ala Thr Tyr Thr Glu Cys  
 500 505 510  
 Cys Cys Leu Tyr Gly Glu Ala Trp Gly Met Asp Cys Ala Leu Cys Pro  
 515 520 525  
 Ala Gln Asp Ser Asp Asp Phe Glu Ala Leu Cys Asn Val Leu Arg Pro  
 530 535 540  
 Pro Ala Tyr Ser Pro Pro Arg Pro Gly Gly Phe Gly Leu Pro Tyr Glu  
 545 550 555 560  
 Tyr Gly Pro Asp Leu Gly Pro Pro Tyr Gln Gly Leu Pro Tyr Gly Pro  
 565 570 575  
 Glu Leu Tyr Pro Pro Pro Ala Leu Pro Tyr Asp Pro Tyr Pro Pro Pro  
 580 585 590  
 Pro Gly Pro Phe Ala Arg Arg Glu Ala Pro Tyr Gly Ala Pro Arg Phe  
 595 600 605  
 Asp Met Pro Asp Phe Glu Asp Asp Gly Gly Pro Tyr Gly Glu Ser Glu  
 610 615 620  
 Ala Pro Ala Pro Pro Gly Pro Gly Thr Arg Trp Pro Tyr Arg Ser Arg  
 625 630 635 640  
 Asp Thr Arg Arg Ser Phe Pro Glu Pro Glu Glu Pro Pro Glu Gly Gly  
 645 650 655  
 Ser Tyr Ala Gly Ser Leu Ala Glu Pro Arg Ala Glu Phe  
 660 665

<210> 80  
 <211> 321  
 <212> PRT  
 <213> Mus musculus

<400> 80  
 Met Asn Ser Thr Leu Asp Ser Ser Pro Ala Pro Gly Leu Thr Ile Ser  
 1 5 10 15



Pro Thr Met Asp Leu Val Thr Trp Ile Tyr Phe Ser Val Thr Phe Leu  
                   20                  25                  30  
 Ala Met Ala Thr Cys Val Gly Gly Met Ala Gly Asn Ser Leu Val Ile  
                   35                  40                  45  
 Trp Leu Leu Ser Cys Asn Gly Met Gln Arg Ser Pro Phe Cys Val Tyr  
           50                  55                  60  
 Val Leu Asn Leu Ala Val Ala Asp Phe Leu Phe Leu Phe Cys Met Ala  
   65                  70                  75                  80  
 Ser Met Leu Ser Leu Glu Thr Gly Pro Leu Leu Ile Val Asn Ile Ser  
                   85                  90                  95  
 Ala Lys Ile Tyr Glu Gly Met Arg Arg Ile Lys Tyr Phe Ala Tyr Thr  
                   100                  105                  110  
 Ala Gly Leu Ser Leu Leu Thr Ala Ile Ser Thr Gln Arg Cys Leu Ser  
           115                  120                  125  
 Val Leu Phe Pro Ile Trp Tyr Lys Cys His Arg Pro Arg His Leu Ser  
   130                  135                  140  
 Ser Val Val Ser Gly Ala Leu Trp Ala Leu Ala Phe Leu Met Asn Phe  
   145                  150                  155                  160  
 Leu Ala Ser Phe Phe Cys Val Gln Phe Trp His Pro Asn Lys His Gln  
                   165                  170                  175  
 Cys Phe Lys Val Asp Ile Val Phe Asn Ser Leu Ile Leu Gly Ile Phe  
           180                  185                  190  
 Met Pro Val Met Ile Leu Thr Ser Thr Ile Leu Phe Ile Arg Val Arg  
           195                  200                  205  
 Lys Asn Ser Leu Met Gln Arg Arg Arg Pro Arg Arg Leu Tyr Val Val  
   210                  215                  220  
 Ile Leu Thr Ser Ile Leu Val Phe Leu Thr Cys Ser Leu Pro Leu Gly  
   225                  230                  235                  240  
 Ile Asn Trp Phe Leu Leu Tyr Trp Val Asp Val Lys Arg Asp Val Arg  
                   245                  250                  255  
 Leu Leu Tyr Ser Cys Val Ser Arg Phe Ser Ser Ser Leu Ser Ser Ser  
           260                  265                  270  
 Ala Asn Pro Val Ile Tyr Phe Leu Val Gly Ser Gln Lys Ser His Arg  
           275                  280                  285  
 Leu Gln Glu Ser Leu Gly Ala Val Leu Gly Arg Ala Leu Arg Asp Glu  
   290                  295                  300  
 Pro Glu Pro Glu Gly Arg Glu Thr Pro Ser Thr Cys Thr Asn Asp Gly  
   305                  310                  315                  320

Val

<210> 81  
<211> 322  
<212> PRT  
<213> Homo sapiens

<400> 81  
Met Asp Pro Thr Ile Ser Thr Leu Asp Thr Glu Leu Thr Pro Ile Asn  
1 5 10 15  
Gly Thr Glu Glu Thr Leu Cys Tyr Lys Gln Thr Leu Ser Leu Thr Val  
20 25 30  
Leu Thr Cys Ile Val Ser Leu Val Gly Leu Thr Gly Asn Ala Val Val  
35 40 45  
Leu Trp Leu Leu Gly Cys Arg Met Arg Arg Asn Ala Phe Ser Ile Tyr  
50 55 60  
Ile Leu Asn Leu Ala Ala Ala Asp Phe Leu Phe Leu Ser Gly Arg Leu  
65 70 75 80  
Ile Tyr Ser Leu Leu Ser Phe Ile Ser Ile Pro His Thr Ile Ser Lys  
85 90 95  
Ile Leu Tyr Pro Val Met Met Phe Ser Tyr Phe Ala Gly Leu Ser Phe  
100 105 110  
Leu Ser Ala Val Ser Thr Glu Arg Cys Leu Ser Val Leu Trp Pro Ile  
115 120 125  
Trp Tyr Arg Cys His Arg Pro Thr His Leu Ser Ala Val Val Cys Val  
130 135 140  
Leu Leu Trp Ala Leu Ser Leu Leu Arg Ser Ile Leu Glu Trp Met Leu  
145 150 155 160  
Cys Gly Phe Leu Phe Ser Gly Ala Asp Ser Ala Trp Cys Gln Thr Ser  
165 170 175  
Asp Phe Ile Thr Val Ala Trp Leu Ile Phe Leu Cys Val Val Leu Cys  
180 185 190  
Gly Ser Ser Leu Val Leu Leu Ile Arg Ile Leu Cys Gly Ser Arg Lys  
195 200 205  
Ile Pro Leu Thr Arg Leu Tyr Val Thr Ile Leu Leu Thr Val Leu Val  
210 215 220  
Phe Leu Leu Cys Gly Leu Pro Phe Gly Ile Gln Phe Phe Leu Phe Leu  
225 230 235 240  
Trp Ile His Val Asp Arg Glu Val Leu Phe Cys His Val His Leu Val

	245		250		255
Ser Ile Phe Leu Ser Ala Leu Asn Ser Ser Ala Asn Pro Ile Ile Tyr					
	260		265		270
Phe Phe Val Gly Ser Phe Arg Gln Arg Gln Asn Arg Gln Asn Leu Lys					
	275		280		285
Leu Val Leu Gln Arg Ala Leu Gln Asp Ala Ser Glu Val Asp Glu Gly					
	290		295		300
Gly Gly Gln Leu Pro Glu Glu Ile Leu Glu Leu Ser Gly Ser Arg Leu					
305		310		315	320
Glu Gln					

<210> 82  
 <211> 304  
 <212> PRT  
 <213> Homo sapiens

<400> 82

Met Asp Asn Thr Ile Pro Gly Gly Ile Asn Ile Thr Ile Leu Ile Pro					
1		5		10	15
Asn Leu Met Ile Ile Ile Phe Gly Leu Val Gly Leu Thr Gly Asn Gly					
	20		25		30
Ile Val Phe Trp Leu Leu Gly Phe Cys Leu His Arg Asn Ala Phe Ser					
	35		40		45
Val Tyr Ile Leu Asn Leu Ala Leu Ala Asp Phe Phe Phe Leu Leu Gly					
	50		55		60
His Ile Ile Asp Ser Ile Leu Leu Leu Leu Asn Val Phe Tyr Pro Ile					
65		70		75	80
Thr Phe Leu Leu Cys Phe Tyr Thr Ile Met Met Val Leu Tyr Ile Ala					
	85		90		95
Gly Leu Ser Met Leu Ser Ala Ile Ser Thr Glu Arg Cys Leu Ser Val					
	100		105		110
Leu Cys Pro Ile Trp Tyr His Cys His Arg Pro Glu His Thr Ser Thr					
	115		120		125
Val Met Cys Ala Val Ile Trp Val Leu Ser Leu Leu Ile Cys Ile Leu					
	130		135		140
Asn Ser Tyr Phe Cys Gly Phe Leu Asn Thr Gln Tyr Lys Asn Glu Asn					
145		150		155	160
Gly Cys Leu Ala Leu Asn Phe Phe Thr Ala Ala Tyr Leu Met Phe Leu					
	165		170		175

Phe Val Val Leu Cys Leu Ser Ser Leu Ala Leu Val Ala Arg Leu Phe  
 180 185 190  
 Cys Gly Thr Gly Gln Ile Lys Leu Thr Arg Leu Tyr Val Thr Ile Ile  
 195 200 205  
 Leu Ser Ile Leu Val Phe Leu Leu Cys Gly Leu Pro Phe Gly Ile His  
 210 215 220  
 Trp Phe Leu Leu Phe Lys Ile Lys Asp Asp Phe His Val Phe Asp Leu  
 225 230 235 240  
 Gly Phe Tyr Leu Ala Ser Val Val Leu Thr Ala Ile Asn Ser Cys Ala  
 245 250 255  
 Asn Pro Ile Ile Tyr Phe Phe Val Gly Ser Phe Arg His Arg Leu Lys  
 260 265 270  
 His Gln Thr Leu Lys Met Val Leu Gln Asn Ala Leu Gln Asp Thr Pro  
 275 280 285  
 Glu Thr Ala Lys Ile Met Val Glu Met Ser Arg Ser Lys Ser Glu Pro  
 290 295 300

<210> 83  
 <211> 321  
 <212> PRT  
 <213> Homo sapiens

<400> 83  
 Met Glu Pro Leu Ala Met Thr Leu Tyr Pro Leu Glu Ser Thr Gln Pro  
 1 5 10 15  
 Thr Arg Asn Lys Thr Pro Asn Glu Thr Thr Trp Ser Ser Glu His Thr  
 20 25 30  
 Asp Asp His Thr Tyr Phe Leu Val Ser Leu Val Ile Cys Ser Leu Gly  
 35 40 45  
 Leu Ala Gly Asn Gly Leu Leu Ile Trp Phe Leu Ile Phe Cys Ile Lys  
 50 55 60  
 Arg Lys Pro Phe Thr Ile Tyr Ile Leu His Leu Ala Ile Ala Asp Phe  
 65 70 75 80  
 Met Val Leu Leu Cys Ser Ser Ile Met Lys Leu Val Asn Thr Phe His  
 85 90 95  
 Ile Tyr Asn Met Thr Leu Glu Ser Tyr Ala Ile Leu Phe Met Ile Phe  
 100 105 110  
 Gly Tyr Asn Thr Gly Leu His Leu Leu Thr Ala Ile Ser Val Glu Arg  
 115 120 125

Cys Leu Ser Val Leu Tyr Pro Ile Trp Tyr Gln Cys Gln Arg Pro Lys  
 130 135 140  
 His Gln Ser Ala Val Ala Cys Met Leu Leu Trp Ala Leu Ser Val Leu  
 145 150 155 160  
 Val Ser Gly Leu Glu Asn Phe Phe Cys Ile Leu Glu Val Lys Pro Gln  
 165 170 175  
 Phe Pro Glu Cys Arg Tyr Val Tyr Ile Phe Ser Cys Ile Leu Thr Phe  
 180 185 190  
 Leu Val Phe Val Pro Leu Met Ile Phe Ser Asn Leu Ile Leu Phe Ile  
 195 200 205  
 Gln Val Cys Cys Asn Leu Lys Pro Arg Gln Pro Thr Lys Leu Tyr Val  
 210 215 220  
 Ile Ile Met Thr Thr Val Ile Leu Phe Leu Val Phe Ala Met Pro Met  
 225 230 235 240  
 Lys Val Leu Leu Ile Ile Gly Tyr Tyr Ser Ser Ser Leu Asp Asp Ser  
 245 250 255  
 Val Trp Asp Ser Leu Pro Tyr Leu Asn Met Leu Ser Thr Ile Asn Cys  
 260 265 270  
 Ser Ile Asn Pro Ile Val Tyr Phe Val Val Gly Ser Leu Arg Arg Lys  
 275 280 285  
 Arg Ser Arg Lys Ser Leu Lys Glu Ala Leu Gln Lys Val Phe Glu Glu  
 290 295 300  
 Lys Pro Val Val Ala Ser Arg Glu Asn Val Thr Gln Phe Ser Leu Pro  
 305 310 315 320  
 Ser

<210> 84  
 <211> 322  
 <212> PRT  
 <213> Homo sapiens

<400> 84  
 Met Asp Pro Thr Val Pro Val Phe Gly Thr Lys Leu Thr Pro Ile Asn  
 1 5 10 15  
 Gly Arg Glu Glu Thr Pro Cys Tyr Asn Gln Thr Leu Ser Phe Thr Val  
 20 25 30  
 Leu Thr Cys Ile Ile Ser Leu Val Gly Leu Thr Gly Asn Ala Val Val  
 35 40 45  
 Leu Trp Leu Leu Gly Tyr Arg Met Arg Arg Asn Ala Val Ser Ile Tyr

50	55	60
Ile Leu Asn Leu Ala Ala Ala Asp Phe Leu Phe Leu Ser Phe Gln Ile 65 70 75 80		
Ile Arg Ser Pro Leu Arg Leu Ile Asn Ile Ser His Leu Ile Arg Lys 85 90 95		
Ile Leu Val Ser Val Met Thr Phe Pro Tyr Phe Thr Gly Leu Ser Met 100 105 110		
Leu Ser Ala Ile Ser Thr Glu Arg Cys Leu Ser Val Leu Trp Pro Ile 115 120 125		
Trp Tyr Arg Cys Arg Arg Pro Thr His Leu Ser Ala Val Val Cys Val 130 135 140		
Leu Leu Trp Gly Leu Ser Leu Leu Phe Ser Met Leu Glu Trp Arg Phe 145 150 155 160		
Cys Asp Phe Leu Phe Ser Gly Ala Asp Ser Ser Trp Cys Glu Thr Ser 165 170 175		
Asp Phe Ile Pro Val Ala Trp Leu Ile Phe Leu Cys Val Val Leu Cys 180 185 190		
Val Ser Ser Leu Val Leu Leu Val Arg Ile Leu Cys Gly Ser Arg Lys 195 200 205		
Met Pro Leu Thr Arg Leu Tyr Val Thr Ile Leu Leu Thr Val Leu Val 210 215 220		
Phe Leu Leu Cys Gly Leu Pro Phe Gly Ile Leu Gly Ala Leu Ile Tyr 225 230 235 240		
Arg Met His Leu Asn Leu Glu Val Leu Tyr Cys His Val Tyr Leu Val 245 250 255		
Cys Met Ser Leu Ser Ser Leu Asn Ser Ser Ala Asn Pro Ile Ile Tyr 260 265 270		
Phe Phe Val Gly Ser Phe Arg Gln Arg Gln Asn Arg Gln Asn Leu Lys 275 280 285		
Leu Val Leu Gln Arg Ala Leu Gln Asp Lys Pro Glu Val Asp Lys Gly 290 295 300		
Glu Gly Gln Leu Pro Glu Glu Ser Leu Glu Leu Ser Gly Ser Arg Leu 305 310 315 320		
Gly Pro		

<210> 85  
 <211> 149  
 <212> PRT

<213> Mus pahari

<400> 85

Met Gly Leu Glu Lys Ser Leu Ile Leu Phe Pro Leu Phe Val Leu Leu  
1 5 10 15

Leu Gly Trp Val Gln Pro Ser Leu Gly Lys Glu Ser Ser Ala Gln Lys  
20 25 30

Phe Glu Arg Gln His Met Asp Ser Ser Gly Ser Ser Asn Asn Ser Pro  
35 40 45

Thr Tyr Cys Asn Gln Met Met Lys Ser Arg Ser Met Thr Lys Glu Ser  
50 55 60

Cys Lys Pro Val Asn Thr Phe Val His Glu Pro Leu Glu Asp Val Gln  
65 70 75 80

Ala Ile Cys Ser Gln Glu Asn Val Thr Cys Lys Asn Gly Asn Arg Asn  
85 90 95

Cys Tyr Lys Ser Ser Ser Ala Leu His Ile Thr Asp Cys His Leu Lys  
100 105 110

Gly Asn Ser Lys Tyr Pro Asn Cys Asn Tyr Asn Thr Asn Gln Tyr Gln  
115 120 125

Lys His Ile Ile Val Ala Cys Asp Gly Asn Pro Tyr Val Pro Val His  
130 135 140

Leu Asp Ala Thr Val  
145

<210> 86

<211> 129

<212> PRT

<213> Homo sapiens

<220>

<221> VARIANT

<222> (1)

<223> Wherein Xaa is any amino acid as defined in the  
specification

<400> 86

Xaa Lys Glu Ser Ala Ala Ala Lys Phe Glu Arg Gln His Met Asp Ser  
1 5 10 15

Gly Asn Ser Pro Ser Ser Ser Ser Thr Tyr Cys Asn Gln Met Met Arg  
20 25 30

Arg Arg Asn Met Thr Gln Gly Arg Cys Lys Pro Val Asn Thr Phe Val  
35 40 45

His Glu Ser Leu Val Asp Val Gln Asn Val Cys Phe Gln Glu Lys Val  
50 55 60

Thr Cys Lys Asn Gly Gln Gly Asn Cys Tyr Lys Ser Asn Ser Ser Met  
65 70 75 80

His Ile Thr Asp Cys Arg Leu Thr Asn Gly Ser Arg Tyr Pro Asn Cys  
85 90 95

Ala Tyr Arg Thr Ser Pro Lys Glu Arg His Ile Ile Val Ala Cys Glu  
100 105 110

Gly Ser Pro Tyr Val Pro Val His Phe Asp Ala Ser Val Glu Asp Ser  
115 120 125

Thr

<210> 87  
<211> 208  
<212> PRT  
<213> Mus musculus

<400> 87  
Met Lys Val Thr Leu Val His Leu Leu Phe Met Met Leu Leu Leu Leu  
1 5 10 15

Leu Gly Leu Gly Leu Gly Leu Gly Leu Gly Leu His Met Ala Ala Ala  
20 25 30

Val Leu Glu Asp Gln Pro Leu Asn Glu Phe Trp Pro Ser Asp Ser Gln  
35 40 45

Asn Thr Glu Glu Gly Glu Gly Ile Trp Thr Thr Glu Gly Leu Ala Leu  
50 55 60

Gly Tyr Lys Glu Met Ala Gln Pro Val Trp Pro Glu Glu Ala Val Leu  
65 70 75 80

Ser Glu Asp Glu Val Gly Gly Ser Arg Met Leu Arg Ala Glu Pro Arg  
85 90 95

Phe Gln Ser Lys Gln Asp Tyr Leu Lys Phe Asp Leu Ser Val Arg Asp  
100 105 110

Cys Asn Thr Met Met Ala His Lys Ile Lys Glu Pro Asn Gln Ser Cys  
115 120 125

Ile Asn Gln Tyr Thr Phe Ile His Glu Asp Pro Asn Thr Val Lys Ala  
130 135 140

Val Cys Asn Gly Ser Leu Val Asp Cys Asp Leu Gln Gly Gly Lys Cys  
145 150 155 160

Tyr Lys Ser Pro Arg Pro Phe Asp Leu Thr Leu Cys Lys Leu Ala Lys  
165 170 175

Pro Gly Gln Val Thr Pro Asn Cys His Tyr Leu Thr Tyr Ile Thr Glu



180	185	190
Lys Ser Ile Phe Met Thr Cys Asn Asp Lys Arg Gln Leu Glu Thr Lys		
195	200	205

<210> 88  
 <211> 128  
 <212> PRT  
 <213> Presbytis entellus

<400> 88
Gly Glu Ser Arg Ala Glu Lys Phe Gln Arg Gln His Met Asp Ser Gly
1 5 10 15
Ser Ser Pro Ser Ser Ser Ser Thr Tyr Cys Asn Gln Met Met Lys Leu
20 25 30
Arg Asn Met Thr Gln Gly Ser Cys Lys Ser Val Asn Thr Phe Val His
35 40 45
Glu Pro Leu Val Asp Val Gln Asn Val Cys Phe Gln Glu Lys Val Thr
50 55 60
Cys Lys Asn Gly Gln Thr Asn Cys Phe Lys Ser Asn Ser Arg Met His
65 70 75 80
Ile Thr Glu Cys Arg Leu Thr Asn Gly Ser Lys Tyr Pro Asn Cys Ala
85 90 95
Tyr Gly Thr Ser Pro Lys Glu Arg His Ile Ile Val Ala Cys Glu Gly
100 105 110
Ser Pro Tyr Val Pro Val His Phe Asp Asp Ser Val Glu Asp Ser Thr
115 120 125

<210> 89  
 <211> 119  
 <212> PRT  
 <213> Iguana iguana

<400> 89
Gln Asp Trp Ser Ser Phe Gln Asn Lys His Ile Asp Tyr Pro Glu Thr
1 5 10 15
Ser Ala Ser Asn Pro Asn Ala Tyr Cys Asp Leu Met Met Gln Arg Arg
20 25 30
Asn Leu Asn Pro Thr Lys Cys Lys Thr Arg Asn Thr Phe Val His Ala
35 40 45

Ser Pro Ser Glu Ile Gln Gln Val Cys Gly Ser Gly Gly Thr His Tyr  
 50 55 60  
 Glu Asp Asn Leu Tyr Asp Ser Asn Glu Ser Phe Asp Leu Thr Asp Cys  
 65 70 75 80  
 Lys Asn Val Gly Gly Thr Ala Pro Ser Ser Cys Lys Tyr Asn Gly Thr  
 85 90 95  
 Pro Gly Thr Lys Arg Ile Arg Ile Ala Cys Glu Asn Asn Gln Pro Val  
 100 105 110  
 His Phe Glu Leu Val Leu Ser  
 115

<210> 90  
 <211> 493  
 <212> PRT  
 <213> Homo sapiens

<400> 90  
 Met Cys Glu Leu Tyr Ser Lys Arg Asp Thr Leu Gly Leu Arg Lys Lys  
 1 5 10 15  
 His Ile Gly Pro Ser Cys Lys Val Phe Phe Ala Ser Asp Pro Ile Lys  
 20 25 30  
 Ile Val Arg Ala Gln Arg Gln Tyr Met Phe Asp Glu Asn Gly Glu Gln  
 35 40 45  
 Tyr Leu Asp Cys Ile Asn Asn Val Ala His Gly Val Val Lys Ala Ala  
 50 55 60  
 Leu Lys Gln Met Glu Leu Leu Asn Thr Asn Ser Arg Phe Leu His Asp  
 65 70 75 80  
 Asn Ile Val Glu Tyr Ala Lys Arg Leu Ser Ala Thr Leu Pro Glu Lys  
 85 90 95  
 Leu Ser Val Cys Tyr Phe Thr Asn Ser Gly Ser Glu Ala Asn Asp Leu  
 100 105 110  
 Ala Leu Arg Leu Ala Arg Gln Phe Arg Gly His Gln Asp Val Ile Thr  
 115 120 125  
 Leu Asp His Ala Tyr His Gly His Leu Ser Ser Leu Ile Glu Ile Ser  
 130 135 140  
 Pro Tyr Lys Phe Gln Lys Gly Lys Asp Val Lys Lys Glu Phe Val His  
 145 150 155 160  
 Val Ala Pro Thr Pro Asp Thr Tyr Arg Gly Lys Tyr Arg Glu Asp His  
 165 170 175  
 Ala Asp Ser Ala Ser Ala Tyr Ala Asp Glu Val Lys Lys Ile Ile Glu

180					185					190					
Asp	Ala	His	Asn	Ser	Gly	Arg	Lys	Ile	Ala	Ala	Phe	Ile	Ala	Glu	Ser
		195					200					205			
Met	Gln	Ser	Cys	Gly	Gly	Gln	Ile	Ile	Pro	Pro	Ala	Gly	Tyr	Phe	Gln
	210					215					220				
Lys	Val	Ala	Glu	Tyr	Val	His	Gly	Ala	Gly	Gly	Val	Phe	Ile	Ala	Asp
225					230					235					240
Glu	Val	Gln	Val	Gly	Phe	Gly	Arg	Val	Gly	Lys	His	Phe	Trp	Ser	Phe
				245					250					255	
Gln	Met	Tyr	Gly	Glu	Asp	Phe	Val	Pro	Asp	Ile	Val	Thr	Met	Gly	Lys
			260					265					270		
Pro	Met	Gly	Asn	Gly	His	Pro	Val	Ala	Cys	Val	Val	Thr	Thr	Lys	Glu
		275					280					285			
Ile	Ala	Glu	Ala	Phe	Ser	Ser	Ser	Gly	Met	Glu	Tyr	Phe	Asn	Thr	Tyr
	290					295					300				
Gly	Gly	Asn	Pro	Val	Ser	Cys	Ala	Val	Gly	Leu	Ala	Val	Leu	Asp	Ile
305					310					315					320
Ile	Glu	Asn	Glu	Asp	Leu	Gln	Gly	Asn	Ala	Lys	Arg	Val	Gly	Asn	Tyr
				325					330					335	
Leu	Thr	Glu	Leu	Leu	Lys	Lys	Gln	Lys	Ala	Lys	His	Thr	Leu	Ile	Gly
			340					345					350		
Asp	Ile	Arg	Gly	Ile	Gly	Leu	Phe	Ile	Gly	Ile	Asp	Leu	Val	Lys	Asp
		355					360					365			
His	Leu	Lys	Arg	Thr	Pro	Ala	Thr	Ala	Glu	Ala	Gln	His	Ile	Ile	Tyr
	370					375					380				
Lys	Met	Lys	Glu	Lys	Arg	Val	Leu	Leu	Ser	Ala	Asp	Gly	Pro	His	Arg
385					390					395					400
Asn	Val	Leu	Lys	Ile	Lys	Pro	Pro	Met	Cys	Phe	Thr	Glu	Glu	Asp	Ala
				405					410					415	
Lys	Phe	Met	Val	Asp	Gln	Leu	Asp	Arg	Ile	Leu	Thr	Val	Leu	Glu	Glu
			420					425					430		
Ala	Met	Gly	Thr	Lys	Thr	Glu	Ser	Val	Thr	Ser	Glu	Asn	Thr	Pro	Cys
		435					440					445			
Lys	Thr	Lys	Met	Leu	Lys	Glu	Ala	His	Ile	Glu	Leu	Leu	Arg	Asp	Ser
	450					455					460				
Thr	Thr	Asp	Ser	Lys	Glu	Asn	Pro	Ser	Arg	Lys	Arg	Asn	Gly	Met	Cys
465					470					475					480
Thr	Asp	Thr	His	Ser	Leu	Leu	Ser	Lys	Arg	Leu	Lys	Thr			

485

490

<210> 91  
 <211> 499  
 <212> PRT  
 <213> Mus musculus

<400> 91

Met	Cys	Glu	Leu	Tyr	Ser	Lys	Gln	Asp	Thr	Leu	Ala	Leu	Arg	Glu	Arg
1				5					10					15	
His	Ile	Gly	Pro	Ser	Cys	Lys	Ile	Phe	Phe	Ala	Ala	Asp	Pro	Ile	Lys
			20					25					30		
Ile	Met	Arg	Ala	Gln	Gly	Gln	Tyr	Met	Phe	Asp	Glu	Lys	Gly	Glu	Arg
		35					40					45			
Tyr	Leu	Asp	Cys	Ile	Asn	Asn	Val	Ala	His	Val	Gly	His	Cys	His	Pro
	50					55					60				
Glu	Val	Val	Lys	Ala	Ala	Ala	Lys	Gln	Met	Glu	Leu	Leu	Asn	Thr	Asn
	65				70					75					80
Ser	Arg	Phe	Leu	His	Asp	Asn	Ile	Ile	Glu	Phe	Ala	Lys	Arg	Leu	Thr
				85					90					95	
Ala	Thr	Leu	Pro	Gln	Glu	Leu	Ser	Val	Cys	Tyr	Phe	Thr	Asn	Ser	Gly
			100					105					110		
Ser	Glu	Ala	Asn	Asp	Leu	Ala	Leu	Arg	Leu	Ala	Arg	Gln	Phe	Arg	Gly
		115					120					125			
His	Gln	Asp	Val	Ile	Thr	Leu	Asp	His	Ala	Tyr	His	Gly	His	Leu	Ser
	130					135					140				
Ser	Leu	Ile	Glu	Ile	Ser	Pro	Tyr	Lys	Phe	Gln	Lys	Gly	Lys	Asp	Val
145					150					155					160
Lys	Arg	Glu	Thr	Val	His	Val	Ala	Pro	Ala	Pro	Asp	Thr	Tyr	Arg	Gly
				165					170					175	
Lys	Tyr	Arg	Glu	Asp	His	Glu	Asp	Pro	Ser	Thr	Ala	Tyr	Ala	Asp	Glu
			180					185					190		
Val	Lys	Lys	Ile	Ile	Glu	Glu	Ala	His	Ser	Ser	Gly	Arg	Lys	Ile	Ala
		195					200					205			
Ala	Phe	Ile	Ala	Glu	Ser	Met	Gln	Ser	Cys	Gly	Gly	Gln	Ile	Ile	Pro
	210					215					220				
Pro	Ala	Gly	Tyr	Phe	Gln	Lys	Val	Ala	Glu	His	Ile	His	Lys	Ala	Gly
225					230					235					240
Gly	Val	Phe	Ile	Ala	Asp	Glu	Val	Gln	Val	Gly	Phe	Gly	Arg	Val	Gly
				245					250					255	

Arg Tyr Phe Trp Ser Phe Gln Met Tyr Gly Glu Asp Phe Val Pro Asp  
 260 265 270  
 Ile Val Thr Met Gly Lys Pro Met Gly Asp Gly His Pro Ile Ser Cys  
 275 280 285  
 Val Val Thr Thr Lys Glu Ile Ala Glu Ala Phe Ser Ser Ser Gly Met  
 290 295 300  
 Glu Tyr Phe Asn Thr Tyr Gly Gly Asn Pro Val Ser Cys Ala Val Gly  
 305 310 315 320  
 Leu Ala Val Leu Asp Val Ile Glu Lys Glu Asn Leu Gln Gly Asn Ala  
 325 330 335  
 Val Arg Val Gly Thr Tyr Leu Met Glu Leu Leu Ser Glu Gln Lys Ala  
 340 345 350  
 Lys His Pro Leu Ile Gly Asp Ile Arg Gly Val Gly Leu Phe Ile Gly  
 355 360 365  
 Ile Asp Leu Val Lys Asp Arg Glu Lys Arg Thr Pro Ala Thr Ala Glu  
 370 375 380  
 Ala Gln His Ile Ile Tyr Glu Met Lys Gly Lys Gly Val Leu Leu Ser  
 385 390 395 400  
 Ala Asp Gly Pro His Arg Asn Val Leu Lys Ile Lys Pro Pro Met Cys  
 405 410 415  
 Phe Thr Glu Asp Asp Ala Lys Phe Leu Val Asp His Leu Asp Gly Ile  
 420 425 430  
 Leu Thr Val Leu Glu Glu Ala Met Asp Ser Lys Ser Gly Thr Val Phe  
 435 440 445  
 Ser Glu Asn Thr Ala Tyr Arg Thr Lys Met Pro Lys Glu Ile Gln Val  
 450 455 460  
 Glu Leu Pro Asn Leu Ser Ala Thr Glu Ala Arg Glu Ile Pro Arg Gly  
 465 470 475 480  
 Lys Arg Asn Gly Val Cys Ser Asp Gln Gln Ala Leu Leu Ser Lys Arg  
 485 490 495  
 Leu Lys Thr

<210> 92  
 <211> 426  
 <212> PRT  
 <213> Homo sapiens

<400> 92  
 Met Glu Leu Leu Asn Thr Asn Ser Arg Phe Leu His Asp Asn Ile Val  
 1 5 10 15

Glu Tyr Ala Lys Arg Leu Ser Ala Thr Leu Pro Glu Lys Leu Ser Val  
                   20                                  25                                  30

Cys Tyr Phe Thr Asn Ser Gly Ser Glu Ala Asn Asp Leu Ala Leu Arg  
                   35                                  40                                  45

Leu Ala Arg Gln Phe Arg Gly His Gln Asp Val Ile Thr Leu Asp His  
                   50                                  55                                  60

Ala Tyr His Gly His Leu Ser Ser Leu Ile Glu Ile Ser Pro Tyr Lys  
                   65                                  70                                  75                                  80

Phe Gln Lys Gly Lys Asp Val Lys Lys Glu Phe Val His Val Ala Pro  
                                   85                                  90                                  95

Thr Pro Asp Thr Tyr Arg Gly Lys Tyr Arg Glu Asp His Ala Asp Ser  
                   100                                  105                                  110

Ala Ser Ala Tyr Ala Asp Glu Val Lys Lys Ile Ile Glu Asp Ala His  
                   115                                  120                                  125

Asn Ser Gly Arg Lys Ile Ala Ala Phe Ile Ala Glu Ser Met Gln Ser  
                   130                                  135                                  140

Cys Gly Gly Gln Ile Ile Pro Pro Ala Gly Tyr Phe Gln Lys Val Ala  
                   145                                  150                                  155                                  160

Glu Tyr Val His Gly Ala Gly Gly Val Phe Ile Ala Asp Glu Val Gln  
                                   165                                  170                                  175

Val Gly Phe Gly Arg Val Gly Lys His Phe Trp Ser Phe Gln Met Tyr  
                   180                                  185                                  190

Gly Glu Asp Phe Val Pro Asp Ile Val Thr Met Gly Lys Pro Met Gly  
                   195                                  200                                  205

Asn Gly His Pro Val Ala Cys Val Val Thr Thr Lys Glu Ile Ala Glu  
                   210                                  215                                  220

Ala Phe Ser Ser Ser Gly Met Glu Tyr Phe Asn Thr Tyr Gly Gly Asn  
                   225                                  230                                  235                                  240

Pro Val Ser Cys Ala Val Gly Leu Ala Val Leu Asp Ile Ile Glu Asn  
                                   245                                  250                                  255

Glu Asp Leu Gln Gly Asn Ala Lys Arg Val Gly Asn Tyr Leu Thr Glu  
                                   260                                  265                                  270

Leu Leu Lys Lys Gln Lys Ala Lys His Thr Leu Ile Gly Asp Ile Arg  
                   275                                  280                                  285

Gly Ile Gly Leu Phe Ile Gly Ile Asp Leu Val Lys Asp His Leu Lys  
                   290                                  295                                  300

Arg Thr Pro Ala Thr Ala Glu Ala Gln His Ile Ile Tyr Lys Met Lys  
                   305                                  310                                  315                                  320

Glu Lys Arg Val Leu Leu Ser Ala Asp Gly Pro His Arg Asn Val Leu  
                             325                            330                            335  
 Lys Ile Lys Pro Pro Met Cys Phe Thr Glu Glu Asp Ala Lys Phe Met  
                             340                            345                            350  
 Val Asp Gln Leu Asp Arg Ile Leu Thr Val Leu Glu Glu Ala Met Gly  
                             355                            360                            365  
 Thr Lys Thr Glu Ser Val Thr Ser Glu Asn Thr Pro Cys Lys Thr Lys  
                             370                            375                            380  
 Met Leu Lys Glu Ala His Ile Glu Leu Leu Arg Asp Ser Thr Thr Asp  
                             385                            390                            395                            400  
 Ser Lys Glu Asn Pro Ser Arg Lys Arg Asn Gly Met Cys Thr Asp Thr  
                             405                            410                            415  
 His Ser Leu Leu Ser Lys Arg Leu Lys Thr  
                             420                            425

<210> 93  
 <211> 473  
 <212> PRT  
 <213> Mus musculus

<400> 93  
 Thr Arg Thr Ala Arg Arg His Gly Arg Gly His Gly Ala Lys Ala Val  
   1                            5                            10                            15  
 Thr Leu Asp Leu Arg Arg Arg Leu Leu Ser Ser Ser Cys Arg Leu Phe  
                             20                            25                            30  
 Phe Pro Glu Asp Pro Val Lys Ile Ile Arg Gly Gln Gly Gln Tyr Leu  
                             35                            40                            45  
 Tyr Asp Glu Gln Gly Arg Glu Tyr Leu Asp Cys Ile Asn Asn Val Ala  
                             50                            55                            60  
 His Val Gly His Cys His Pro Thr Val Val Gln Ala Ala His Glu Gln  
                             65                            70                            75                            80  
 Asn Leu Val Leu Asn Thr Asn Ser Arg Tyr Leu His Gly Asn Ile Val  
                             85                            90                            95  
 Asp Tyr Ala Gln Arg Leu Ser Glu Thr Leu Pro Glu Gln Leu Ser Val  
                             100                            105                            110  
 Phe Tyr Phe Leu Asn Ser Gly Ser Glu Ala Asn Asp Leu Ala Leu Arg  
                             115                            120                            125  
 Leu Ala Arg Gln Tyr Thr Gly His Gln Asp Val Val Val Leu Asp His  
                             130                            135                            140  
 Ala Tyr His Gly His Leu Ser Ser Leu Ile Asp Ile Ser Pro Tyr Lys

145		150		155		160
Phe Arg Asn Leu Gly Gly Gln Lys Glu Trp Val His Val Ala Pro Leu						
		165		170		175
Pro Asp Thr Tyr Arg Gly Pro Tyr Arg Glu Asp His Pro Asn Pro Ala						
		180		185		190
Glu Ala Tyr Ala Asn Glu Val Lys His Val Ile Ser Ser Ala Gln Gln						
		195		200		205
Lys Gly Arg Lys Ile Ala Ala Phe Phe Ala Glu Ser Leu Pro Ser Val						
		210		215		220
Ser Gly Gln Ile Ile Pro Pro Ala Gly Tyr Phe Ser Gln Val Ala Glu						
		225		230		240
His Ile His Arg Ala Gly Gly Leu Phe Val Ala Asp Glu Ile Gln Val						
		245		250		255
Gly Phe Gly Arg Ile Gly Lys His Phe Trp Ala Phe Gln Leu Glu Gly						
		260		265		270
Glu Asp Phe Val Pro Asp Ile Val Thr Met Gly Lys Ser Ile Gly Asn						
		275		280		285
Gly His Pro Val Ala Cys Met Ala Thr Thr Gln Ala Val Ser Arg Ala						
		290		295		300
Phe Glu Ala Thr Gly Val Glu Tyr Phe Asn Thr Phe Gly Gly Asn Pro						
		305		310		320
Val Ser Cys Ala Val Gly Leu Ala Val Leu Asp Val Leu Lys Thr Glu						
		325		330		335
Gln Leu Gln Ala His Ala Thr Asn Val Gly Ser Phe Leu Leu Glu His						
		340		345		350
Leu Thr Gln Gln Lys Ala Lys His Pro Ile Ile Gly Asp Val Arg Gly						
		355		360		365
Thr Gly Leu Phe Ile Gly Val Asp Leu Ile Lys Asp Glu Thr Leu Arg						
		370		375		380
Thr Pro Ala Thr Glu Glu Ala Glu Tyr Leu Val Ser Arg Leu Lys Glu						
		385		390		400
Asn Tyr Ile Leu Leu Ser Ile Asp Gly Pro Gly Lys Asn Ile Leu Lys						
		405		410		415
Phe Lys Pro Pro Met Cys Phe Asn Val Asp Asn Ala Gln His Val Val						
		420		425		430
Ala Lys Leu Asp Asp Ile Leu Thr Asp Met Glu Glu Lys Val Arg Ser						
		435		440		445
Cys Glu Thr Leu Arg Ile Lys His Pro Pro Glu Asp Thr His Pro Thr						



450                      455                      460  
 Gln Ile Leu Leu Thr Arg Gln Gln Asp  
 465                      470  
  
 <210> 94  
 <211> 494  
 <212> PRT  
 <213> *Drosophila melanogaster*  
  
 <400> 94  
 Met Pro Phe Ala His Glu Gln Leu Asn Leu Val Ala Ser Glu Gln Leu  
   1                      5                      10                      15  
 Ser Lys Thr Glu Thr Ile Lys Leu Arg Asn Gln His Ile Gly Gln Ala  
                     20                      25                      30  
 Cys Gln Leu Phe Tyr Arg Ser Asp Pro Leu Lys Ile Val Arg Gly Gln  
                     35                      40                      45  
 Gly Gln Tyr Met Phe Asp Glu Glu Gly Thr Arg Tyr Leu Asp Cys Ile  
                     50                      55                      60  
 Asn Asn Val Ala His Val Gly His Cys His Pro Glu Val Val Arg Ala  
   65                      70                      75                      80  
 Gly Ala Leu Gln Met Ala Thr Ile Ser Thr Asn Asn Arg Phe Leu His  
                     85                      90                      95  
 Asp Glu Leu Val Gln Cys Ala Arg Thr Leu Thr Ser Lys Met Pro Glu  
                     100                      105                      110  
 Pro Leu Ser Val Cys Phe Phe Val Asn Ser Gly Ser Glu Ala Asn Asp  
                     115                      120                      125  
 Leu Ala Leu Arg Leu Ala Arg Asn Phe Thr Lys Arg Gln Asp Val Ile  
   130                      135                      140  
 Thr Leu Asp His Ala Tyr His Gly His Leu Gln Ser Val Met Glu Val  
 145                      150                      155                      160  
 Ser Pro Tyr Lys Phe Asn Gln Pro Gly Gly Glu Ala Lys Pro Asp Tyr  
                     165                      170                      175  
 Val His Val Ala Pro Cys Pro Asp Val Tyr Gly Gly Lys Phe Thr Asp  
                     180                      185                      190  
 Lys Met Tyr Pro Asp Ala Asp Met Gly Ala Leu Tyr Ala Gln Pro Ile  
                     195                      200                      205  
 Glu Glu Ile Cys Gln Lys Gln Leu Ala Lys Gly Gln Gly Val Ala Ala  
   210                      215                      220  
 Phe Ile Ala Glu Ser Leu Gln Ser Cys Gly Gly Gln Ile Leu Pro Pro  
 225                      230                      235                      240

Ala Gly Tyr Phe Gln Ala Val Tyr Asp Ala Val Arg Ser Ala Gly Gly  
 245 250 255  
 Val Cys Ile Ala Asp Glu Val Gln Val Gly Phe Gly Arg Val Gly Ser  
 260 265 270  
 His Tyr Trp Ala Phe Glu Thr Gln Asn Val Ile Pro Asp Ile Val Cys  
 275 280 285  
 Val Ala Lys Pro Met Gly Asn Gly His Pro Val Gly Ala Val Val Thr  
 290 295 300  
 Thr Pro Glu Ile Ala Gln Ala Phe His Ala Thr Gly Val Ala Tyr Phe  
 305 310 315 320  
 Asn Thr Tyr Gly Gly Asn Pro Val Ser Cys Ala Ile Ala Asn Ala Val  
 325 330 335  
 Met Arg Val Ile Glu Glu Glu Gly Leu Gln Gln Lys Ala Leu Val Leu  
 340 345 350  
 Gly Asp Tyr Leu Leu Glu Glu Cys Asn Arg Leu Lys Gln Glu Phe Glu  
 355 360 365  
 Cys Ile Gly Asp Val Arg Gly Ala Gly Leu Phe Val Gly Ile Glu Leu  
 370 375 380  
 Val Gln Asp Arg Lys Glu Arg Ile Pro Asp Lys Lys Ala Ala His Trp  
 385 390 395 400  
 Val Val Asn Arg Met Lys Gln Leu His Arg Val Leu Val Ser Ser Asp  
 405 410 415  
 Gly Pro Asn Asp Asn Val Ile Lys Leu Lys Pro Pro Met Cys Phe Asn  
 420 425 430  
 Arg Glu Asn Ala Asp Glu Phe Leu Leu Gly Phe Arg Glu Cys Leu Thr  
 435 440 445  
 Ala Val Met Gln Glu Arg Leu Ala Ser Ala Thr Ser Ala Ala Met Ala  
 450 455 460  
 Ala Thr Ser Gly Val Ile Ala Thr Ala Thr Glu Thr Leu Ala Asn Lys  
 465 470 475 480  
 Thr Lys Leu Phe Glu Arg Gln Asp Arg Leu Ile Lys Ser Val  
 485 490

<210> 95

<211> 1013

<212> PRT

<213> Mus musculus

<400> 95

Met Gly Leu Gln Ala Leu Ser Pro Arg Met Leu Leu Trp Leu Val Val  
 1 5 10 15

Ser Gly Ile Val Phe Ser Arg Val Leu Trp Val Cys Ala Gly Leu Asp  
                     20                    25                    30

Tyr Asp Tyr Thr Phe Asp Gly Asn Glu Glu Asp Lys Thr Glu Pro Ile  
                     35                    40                    45

Asp Tyr Lys Asp Pro Cys Lys Ala Ala Val Phe Trp Gly Asp Ile Ala  
                     50                    55                    60

Leu Asp Asp Glu Asp Leu Asn Ile Phe Gln Ile Asp Arg Thr Ile Asp  
                     65                    70                    75                    80

Leu Thr Gln Ser Pro Phe Gly Lys Leu Gly His Ile Thr Gly Gly Phe  
                     85                    90                    95

Gly Asp His Gly Met Pro Lys Lys Arg Gly Ala Leu Tyr Gln Leu Ile  
                     100                    105                    110

Glu Arg Ile Arg Arg Ile Gly Ser Gly Leu Glu Gln Asn Asn Thr Met  
                     115                    120                    125

Lys Gly Lys Ala Pro Pro Lys Leu Ser Glu Gln Ser Glu Lys Asn Arg  
                     130                    135                    140

Val Pro Arg Ala Ala Thr Ser Arg Thr Glu Arg Ile Trp Pro Gly Gly  
                     145                    150                    155                    160

Val Ile Pro Tyr Val Ile Gly Gly Asn Phe Thr Gly Ser Gln Arg Ala  
                     165                    170                    175

Met Phe Lys Gln Ala Met Arg His Trp Glu Lys His Thr Cys Val Thr  
                     180                    185                    190

Phe Thr Glu Arg Ser Asp Glu Glu Ser Tyr Ile Val Phe Thr Tyr Arg  
                     195                    200                    205

Pro Cys Gly Cys Cys Ser Tyr Val Gly Arg Arg Gly Asn Gly Pro Gln  
                     210                    215                    220

Ala Ile Ser Ile Gly Lys Asn Cys Asp Lys Phe Gly Ile Val Val His  
                     225                    230                    235                    240

Glu Leu Gly His Val Ile Gly Phe Trp His Glu His Thr Arg Pro Asp  
                     245                    250                    255

Arg Asp Asn His Val Thr Ile Ile Arg Glu Asn Ile Gln Pro Gly Gln  
                     260                    265                    270

Glu Tyr Asn Phe Leu Lys Met Glu Pro Gly Glu Val Asn Ser Leu Gly  
                     275                    280                    285

Glu Arg Tyr Asp Phe Asp Ser Ile Met His Tyr Ala Arg Asn Thr Phe  
                     290                    295                    300

Ser Arg Gly Met Phe Leu Asp Thr Ile Leu Pro Ser Arg Asp Asp Asn  
                     305                    310                    315                    320

Gly Ile Arg Pro Ala Ile Gly Gln Arg Thr Arg Leu Ser Lys Gly Asp  
 325 330 335  
 Ile Ala Gln Ala Arg Lys Leu Tyr Arg Cys Pro Ala Cys Gly Glu Thr  
 340 345 350  
 Leu Gln Glu Ser Ser Gly Asn Leu Ser Ser Pro Gly Phe Pro Asn Gly  
 355 360 365  
 Tyr Pro Ser Tyr Thr His Cys Ile Trp Arg Val Ser Val Thr Pro Gly  
 370 375 380  
 Glu Lys Ile Val Leu Asn Phe Thr Thr Met Asp Leu Tyr Lys Ser Ser  
 385 390 395 400  
 Leu Cys Trp Tyr Asp Tyr Ile Glu Val Arg Asp Gly Tyr Trp Arg Lys  
 405 410 415  
 Ser Pro Leu Leu Gly Arg Phe Cys Gly Asp Lys Val Ala Gly Val Leu  
 420 425 430  
 Thr Ser Thr Asp Ser Arg Met Trp Ile Glu Phe Arg Ser Ser Ser Asn  
 435 440 445  
 Trp Val Gly Lys Gly Phe Ala Ala Val Tyr Glu Ala Ile Cys Gly Gly  
 450 455 460  
 Glu Ile Arg Lys Asn Glu Gly Gln Ile Gln Ser Pro Asn Tyr Pro Asp  
 465 470 475 480  
 Asp Tyr Arg Pro Met Lys Glu Cys Val Trp Lys Ile Met Val Ser Glu  
 485 490 495  
 Gly Tyr His Val Gly Leu Thr Phe Gln Ala Phe Glu Ile Glu Arg His  
 500 505 510  
 Asp Ser Cys Ala Tyr Asp His Leu Glu Val Arg Asp Gly Ala Ser Glu  
 515 520 525  
 Asn Ser Pro Leu Ile Gly Arg Phe Cys Gly Tyr Asp Lys Pro Glu Asp  
 530 535 540  
 Ile Arg Ser Thr Ser Asn Thr Leu Trp Met Lys Phe Val Ser Asp Gly  
 545 550 555 560  
 Thr Val Asn Lys Ala Gly Phe Ala Ala Asn Phe Phe Lys Glu Glu Asp  
 565 570 575  
 Glu Cys Ala Lys Pro Asp Arg Gly Gly Cys Glu Gln Arg Cys Leu Asn  
 580 585 590  
 Thr Leu Gly Ser Tyr Gln Cys Ala Cys Glu Pro Gly Tyr Glu Leu Gly  
 595 600 605  
 Pro Asp Arg Arg Ser Cys Glu Ala Ala Cys Gly Gly Leu Leu Thr Lys  
 610 615 620

Leu Asn Gly Thr Ile Thr Thr Pro Gly Trp Pro Lys Glu Tyr Pro Pro  
 625 630 635 640  
 Asn Lys Asn Cys Val Trp Gln Val Ile Ala Pro Ser Gln Tyr Arg Ile  
 645 650 655  
 Ser Val Lys Phe Glu Phe Phe Glu Leu Glu Gly Asn Glu Val Cys Lys  
 660 665 670  
 Tyr Asp Tyr Val Glu Ile Trp Ser Gly Pro Ser Ser Glu Ser Lys Leu  
 675 680 685  
 His Gly Lys Phe Cys Gly Ala Asp Ile Pro Glu Val Met Thr Ser His  
 690 695 700  
 Phe Asn Asn Met Arg Ile Glu Phe Lys Ser Asp Asn Thr Val Ser Lys  
 705 710 715 720  
 Lys Gly Phe Lys Ala His Phe Phe Ser Asp Lys Asp Glu Cys Ser Lys  
 725 730 735  
 Asp Asn Gly Gly Cys Gln His Glu Cys Val Asn Thr Met Gly Ser Tyr  
 740 745 750  
 Thr Cys Gln Cys Arg Asn Gly Phe Val Leu His Glu Asn Lys His Asp  
 755 760 765  
 Cys Lys Glu Ala Glu Cys Glu Gln Lys Ile His Ser Pro Ser Gly Leu  
 770 775 780  
 Ile Thr Ser Pro Asn Trp Pro Asp Lys Tyr Pro Ser Arg Lys Glu Cys  
 785 790 795 800  
 Thr Trp Val Ile Ser Ala Ile Pro Gly His Arg Ile Thr Leu Ala Phe  
 805 810 815  
 Asn Glu Phe Glu Val Glu Gln His Gln Glu Cys Ala Tyr Asp His Leu  
 820 825 830  
 Glu Ile Phe Asp Gly Glu Thr Glu Lys Ser Pro Ile Leu Gly Arg Leu  
 835 840 845  
 Cys Gly Ser Lys Ile Pro Asp Pro Leu Met Ala Thr Gly Asn Glu Met  
 850 855 860  
 Phe Ile Arg Phe Ile Ser Asp Ala Ser Val Gln Arg Lys Gly Phe Gln  
 865 870 875 880  
 Ala Thr His Ser Thr Glu Cys Gly Gly Arg Leu Lys Ala Glu Ser Lys  
 885 890 895  
 Pro Arg Asp Leu Tyr Ser His Ala Gln Phe Gly Asp Asn Asn Tyr Pro  
 900 905 910  
 Gly Gln Leu Asp Cys Glu Trp Leu Leu Val Ser Glu Arg Gly Ser Arg  
 915 920 925

Leu Glu Leu Ser Phe Gln Thr Phe Glu Val Glu Glu Glu Ala Asp Cys  
 930 935 940  
 Gly Tyr Asp Tyr Val Glu Val Phe Asp Gly Leu Ser Ser Lys Ala Val  
 945 950 955 960  
 Gly Leu Gly Arg Phe Cys Gly Ser Gly Pro Pro Glu Glu Ile Tyr Ser  
 965 970 975  
 Ile Gly Asp Val Ala Leu Ile His Phe His Thr Asp Asp Thr Ile Asn  
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 Lys Lys Gly Phe Tyr Ile Arg Tyr Lys Ser Ile Arg Tyr Pro Glu Thr  
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 Met His Ala Lys Asn  
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<210> 96  
 <211> 1012  
 <212> PRT  
 <213> Mus musculus

<400> 96  
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 Leu Asp Tyr Gly Ala Leu Glu Gly Glu Glu Gly Thr Glu Gln Gln Leu  
 35 40 45  
 His Tyr His Asp Pro Cys Lys Ala Ala Val Phe Trp Gly Asp Ile Ala  
 50 55 60  
 Leu Asp Glu Asp Asp Leu Lys Leu Phe His Ile Asp Lys Ala Glu Asp  
 65 70 75 80  
 Trp Thr Lys Pro Ser Ile Asp Lys Pro Gly His Asp Thr Gly Gly Leu  
 85 90 95  
 Glu Glu Thr Ser Ala Arg Trp Pro Asn Asp Thr Ala Ser Asn Ala Ser  
 100 105 110  
 Ile Gln Ala Pro Arg Lys Asp Gly Lys Asp Ala Thr Thr Phe Leu Pro  
 115 120 125  
 Asn Pro Gly Thr Ser Asn Thr Thr Ala Lys Thr Phe Ser Ala Arg Val  
 130 135 140  
 Arg Arg Ala Thr Thr Ser Arg Thr Glu Arg Ile Trp Pro Gly Gly Val  
 145 150 155 160  
 Ile Pro Tyr Val Ile Gly Gly Asn Phe Thr Gly Thr Gln Arg Ala Ile

165							170							175				
Phe	Lys	Gln	Ala	Met	Arg	His	Trp	Glu	Lys	His	Thr	Cys	Val	Thr	Phe			
			180					185					190					
Val	Glu	Arg	Thr	Asp	Glu	Glu	Ser	Phe	Ile	Val	Phe	Ser	Tyr	Arg	Thr			
		195						200						205				
Cys	Gly	Cys	Cys	Ser	Tyr	Val	Gly	Arg	Arg	Gly	Gly	Gly	Pro	Gln	Ala			
		210					215						220					
Ile	Ser	Ile	Gly	Lys	Asn	Cys	Asp	Lys	Phe	Gly	Ile	Val	Ala	His	Glu			
225							230					235				240		
Leu	Gly	His	Val	Val	Gly	Phe	Trp	His	Glu	His	Thr	Arg	Pro	Asp	Arg			
			245						250						255			
Asp	Gln	His	Val	Thr	Ile	Ile	Arg	Glu	Asn	Ile	Gln	Pro	Gly	Gln	Glu			
			260						265						270			
Tyr	Asn	Phe	Leu	Lys	Met	Glu	Ala	Gly	Glu	Val	Ser	Ser	Leu	Gly	Glu			
		275					280						285					
Thr	Tyr	Asp	Phe	Asp	Ser	Ile	Met	His	Tyr	Ala	Arg	Asn	Thr	Phe	Ser			
		290					295						300					
Arg	Gly	Val	Phe	Leu	Asp	Thr	Ile	Leu	Pro	Arg	Arg	Asp	Asp	Asn	Gly			
305							310						315			320		
Val	Arg	Pro	Thr	Ile	Gly	Gln	Arg	Val	Arg	Leu	Ser	Gln	Gly	Asp	Ile			
			325						330						335			
Ala	Gln	Ala	Arg	Lys	Leu	Tyr	Lys	Cys	Pro	Ala	Cys	Gly	Glu	Thr	Leu			
			340					345						350				
Gln	Asp	Thr	Thr	Gly	Asn	Phe	Ser	Ala	Pro	Gly	Phe	Pro	Asn	Gly	Tyr			
		355						360						365				
Pro	Ser	Tyr	Ser	His	Cys	Val	Trp	Arg	Ile	Ser	Val	Thr	Pro	Gly	Glu			
		370					375						380					
Lys	Ile	Ile	Leu	Asn	Phe	Thr	Ser	Met	Asp	Leu	Phe	Lys	Ser	Arg	Leu			
385							390						395			400		
Cys	Trp	Tyr	Asp	Tyr	Val	Glu	Ile	Arg	Asp	Gly	Tyr	Trp	Arg	Lys	Ala			
					405					410						415		
Pro	Leu	Leu	Gly	Arg	Phe	Cys	Gly	Asp	Lys	Ile	Pro	Glu	Ser	Leu	Val			
			420						425						430			
Ser	Ser	Asp	Ser	Arg	Leu	Trp	Val	Glu	Phe	Arg	Ser	Ser	Ser	Ser	Ser			
		435					440						445					
Leu	Gly	Lys	Gly	Phe	Phe	Ala	Val	Tyr	Glu	Ala	Met	Cys	Gly	Gly	Asp			
		450					455						460					
Ile	Thr	Lys	Asp	Ala	Gly	Gln	Ile	Gln	Ser	Pro	Asn	Tyr	Pro	Asp	Asp			

465		470		475		480
Tyr Arg Pro Ser Lys Glu Cys Val Trp Arg Ile Thr Val Pro Asp Gly						
	485			490		495
Phe His Val Gly Leu Thr Phe Gln Ser Phe Glu Ile Glu Arg His Asp						
	500		505		510	
Ser Cys Ala Tyr Asp Tyr Leu Glu Ile Arg Asp Gly Pro Thr Glu Asp						
	515		520		525	
Ser Thr Leu Ile Gly His Phe Cys Gly Tyr Glu Lys Pro Glu Ala Val						
	530		535		540	
Lys Ser Ser Ala Asn Arg Leu Trp Val Lys Phe Val Ser Asp Gly Ser						
	545		550		555	560
Ile Asn Lys Ala Gly Phe Ala Ala Asn Phe Phe Lys Glu Val Asp Glu						
	565		570		575	
Cys Ser Trp Pro Asp His Gly Gly Cys Glu Gln Arg Cys Val Asn Thr						
	580		585		590	
Leu Gly Ser Tyr Thr Cys Ala Cys Asp Pro Gly Tyr Glu Leu Ala Ala						
	595		600		605	
Asp Lys Lys Thr Cys Glu Val Ala Cys Gly Gly Phe Ile Thr Lys Leu						
	610		615		620	
Asn Gly Thr Ile Thr Ser Pro Gly Trp Pro Lys Glu Tyr Pro Thr Asn						
	625		630		635	640
Lys Asn Cys Val Trp Gln Val Val Ala Pro Val Gln Tyr Arg Ile Ser						
	645		650		655	
Leu Gln Phe Glu Ala Phe Glu Leu Glu Gly Asn Asp Val Cys Lys Tyr						
	660		665		670	
Asp Phe Val Glu Val Arg Ser Gly Leu Ser Pro Asp Ala Lys Leu His						
	675		680		685	
Gly Lys Phe Cys Gly Ser Glu Thr Pro Glu Val Ile Thr Ser Gln Ser						
	690		695		700	
Asn Asn Met Arg Val Glu Phe Lys Ser Asp Asn Thr Val Ser Lys Arg						
	705		710		715	720
Gly Phe Arg Ala His Phe Phe Ser Asp Lys Asp Glu Cys Ala Lys Asp						
	725		730		735	
Asn Gly Gly Cys Gln Gln Glu Cys Val Asn Thr Phe Gly Ser Tyr Leu						
	740		745		750	
Cys Arg Cys Arg Asn Gly Tyr Arg Leu His Glu Asn Gly His Asp Cys						
	755		760		765	
Lys Glu Ala Gly Cys Ala Tyr Lys Ile Ser Ser Ala Glu Gly Thr Leu						



770	775	780
Met Ser Pro Asn Trp	Pro Asp Lys Tyr	Pro Ser Arg Lys Glu Cys Thr
785	790	795 800
Trp Asn Ile Ser	Ser Thr Ala Gly His	Arg Val Lys Ile Thr Phe Ser
	805	810 815
Glu Phe Glu Ile Glu Gln His Gln Glu Cys Ala Tyr Asp His Leu Glu		
	820	825 830
Leu Tyr Asp Gly Thr Asp Ser Leu Ala Pro Ile Leu Gly Arg Phe Cys		
	835	840 845
Gly Ser Lys Lys Pro Asp Pro Val Val Ala Thr Gly Ser Ser Leu Phe		
	850	855 860
Leu Arg Phe Tyr Ser Asp Ala Ser Val Gln Arg Lys Gly Phe Gln Ala		
	865	870 875 880
Val His Ser Thr Glu Cys Gly Gly Arg Leu Lys Ala Glu Val Gln Thr		
	885	890 895
Lys Glu Leu Tyr Ser His Ala Gln Phe Gly Asp Asn Asn Tyr Pro Ser		
	900	905 910
Gln Ala Arg Cys Asp Trp Val Ile Val Ala Glu Asp Gly Tyr Gly Val		
	915	920 925
Glu Leu Ile Phe Arg Thr Phe Glu Val Glu Glu Glu Ala Asp Cys Gly		
	930	935 940
Tyr Asp Phe Met Glu Ala Tyr Asp Gly Tyr Asp Ser Ser Ala Pro Arg		
	945	950 955 960
Leu Gly Arg Phe Cys Gly Ser Gly Pro Leu Glu Glu Ile Tyr Ser Ala		
	965	970 975
Gly Asp Ser Leu Met Ile Arg Phe His Thr Asp Asp Thr Ile Asn Lys		
	980	985 990
Lys Gly Phe His Ala Arg Tyr Thr Ser Thr Lys Phe Gln Asp Ala Leu		
	995	1000 1005
His Met Arg Lys		
1010		

<210> 97  
 <211> 1015  
 <212> PRT  
 <213> Homo sapiens

<400> 97  
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 Thr Ala Asp Tyr Ser Glu Leu Asp Gly Glu Glu Gly Thr Glu Gln Gln  
 35 40 45  
 Leu Glu His Tyr His Asp Pro Cys Lys Ala Ala Val Phe Trp Gly Asp  
 50 55 60  
 Ile Ala Leu Asp Glu Asp Asp Leu Lys Leu Phe His Ile Asp Lys Ala  
 65 70 75 80  
 Arg Asp Trp Thr Lys Gln Thr Val Gly Ala Thr Gly His Ser Thr Gly  
 85 90 95  
 Gly Leu Glu Glu Gln Ala Ser Glu Ser Ser Pro Asp Thr Thr Ala Met  
 100 105 110  
 Asp Thr Gly Thr Lys Glu Ala Gly Lys Asp Gly Arg Glu Asn Thr Thr  
 115 120 125  
 Leu Leu His Ser Pro Gly Thr Leu His Ala Ala Ala Lys Thr Phe Ser  
 130 135 140  
 Pro Arg Val Arg Arg Ala Thr Thr Ser Arg Thr Glu Arg Ile Trp Pro  
 145 150 155 160  
 Gly Gly Val Ile Pro Tyr Val Ile Gly Gly Asn Phe Thr Gly Ser Gln  
 165 170 175  
 Arg Ala Ile Phe Lys Gln Ala Met Arg His Trp Glu Lys His Thr Cys  
 180 185 190  
 Val Thr Phe Ile Glu Arg Thr Asp Glu Glu Ser Phe Ile Val Phe Ser  
 195 200 205  
 Tyr Arg Thr Cys Gly Cys Cys Ser Tyr Val Gly Arg Arg Gly Gly Gly  
 210 215 220  
 Pro Gln Ala Ile Ser Ile Gly Lys Asn Cys Asp Lys Phe Gly Ile Val  
 225 230 235 240  
 Ala His Glu Leu Gly His Val Val Gly Phe Trp His Glu His Thr Arg  
 245 250 255  
 Pro Asp Arg Asp Gln His Val Thr Ile Ile Arg Glu Asn Ile Gln Pro  
 260 265 270  
 Gly Gln Glu Tyr Asn Phe Leu Lys Met Glu Ala Gly Glu Val Ser Ser  
 275 280 285  
 Leu Gly Glu Thr Tyr Asp Phe Asp Ser Ile Met His Tyr Ala Arg Asn  
 290 295 300  
 Thr Phe Ser Arg Gly Val Phe Leu Asp Thr Ile Leu Pro Arg Gln Asp  
 305 310 315 320

Asp Asn Gly Val Arg Pro Thr Ile Gly Gln Arg Val Arg Leu Ser Gln  
 325 330 335  
 Gly Asp Ile Ala Gln Ala Arg Lys Leu Tyr Lys Cys Pro Ala Cys Gly  
 340 345 350  
 Glu Thr Leu Gln Asp Thr Thr Gly Asn Phe Ser Ala Pro Gly Phe Pro  
 355 360 365  
 Asn Gly Tyr Pro Ser Tyr Ser His Cys Val Trp Arg Ile Ser Val Thr  
 370 375 380  
 Pro Gly Glu Lys Ile Val Leu Asn Phe Thr Ser Met Asp Leu Phe Lys  
 385 390 395 400  
 Ser Arg Leu Cys Trp Tyr Asp Tyr Val Glu Val Arg Asp Gly Tyr Trp  
 405 410 415  
 Arg Lys Ala Pro Leu Leu Gly Arg Phe Cys Gly Asp Lys Ile Pro Glu  
 420 425 430  
 Pro Leu Val Ser Thr Asp Ser Arg Leu Trp Val Glu Phe Arg Ser Ser  
 435 440 445  
 Ser Asn Ile Leu Gly Lys Gly Phe Phe Ala Ala Tyr Glu Ala Thr Cys  
 450 455 460  
 Gly Gly Asp Met Asn Lys Asp Ala Gly Gln Ile Gln Ser Pro Asn Tyr  
 465 470 475 480  
 Pro Asp Asp Tyr Arg Pro Ser Lys Glu Cys Val Trp Arg Ile Thr Val  
 485 490 495  
 Ser Glu Gly Phe His Val Gly Leu Thr Phe Gln Ala Phe Glu Ile Glu  
 500 505 510  
 Arg His Asp Ser Cys Ala Tyr Asp Tyr Leu Glu Val Arg Asp Gly Pro  
 515 520 525  
 Thr Glu Glu Ser Ala Leu Ile Gly His Phe Cys Gly Tyr Glu Lys Pro  
 530 535 540  
 Glu Asp Val Lys Ser Ser Ser Asn Arg Leu Trp Met Lys Phe Val Ser  
 545 550 555 560  
 Asp Gly Ser Ile Asn Lys Ala Gly Phe Ala Ala Asn Phe Phe Lys Glu  
 565 570 575  
 Val Asp Glu Cys Ser Trp Pro Asp His Gly Gly Cys Glu His Arg Cys  
 580 585 590  
 Val Asn Thr Leu Gly Ser Tyr Lys Cys Ala Cys Asp Pro Gly Tyr Glu  
 595 600 605  
 Leu Ala Ala Asp Lys Lys Met Cys Glu Val Ala Cys Gly Gly Phe Ile  
 610 615 620

Thr Lys Leu Asn Gly Thr Ile Thr Ser Pro Gly Trp Pro Lys Glu Tyr  
 625 630 635 640  
 Pro Thr Asn Lys Asn Cys Val Trp Gln Val Val Ala Pro Ala Gln Tyr  
 645 650 655  
 Arg Ile Ser Leu Gln Phe Glu Val Phe Glu Leu Glu Gly Asn Asp Val  
 660 665 670  
 Cys Lys Tyr Asp Phe Val Glu Val Arg Ser Gly Leu Ser Pro Asp Ala  
 675 680 685  
 Lys Leu His Gly Arg Phe Cys Gly Ser Glu Thr Pro Glu Val Ile Thr  
 690 695 700  
 Ser Gln Ser Asn Asn Met Arg Val Glu Phe Lys Ser Asp Asn Thr Val  
 705 710 715 720  
 Ser Lys Arg Gly Phe Arg Ala His Phe Phe Ser Asp Lys Asp Glu Cys  
 725 730 735  
 Ala Lys Asp Asn Gly Gly Cys Gln His Glu Cys Val Asn Thr Phe Gly  
 740 745 750  
 Ser Tyr Leu Cys Arg Cys Arg Asn Gly Tyr Trp Leu His Glu Asn Gly  
 755 760 765  
 His Asp Cys Lys Glu Ala Gly Cys Ala His Lys Ile Ser Ser Val Glu  
 770 775 780  
 Gly Thr Leu Ala Ser Pro Asn Trp Pro Asp Lys Tyr Pro Ser Arg Arg  
 785 790 795 800  
 Glu Cys Thr Trp Asn Ile Ser Ser Thr Ala Gly His Arg Val Lys Leu  
 805 810 815  
 Thr Phe Asn Glu Phe Glu Ile Glu Gln His Gln Glu Cys Ala Tyr Asp  
 820 825 830  
 His Leu Glu Met Tyr Asp Gly Pro Asp Ser Leu Ala Pro Ile Leu Gly  
 835 840 845  
 Arg Phe Cys Gly Ser Lys Lys Pro Asp Pro Thr Val Ala Ser Gly Ser  
 850 855 860  
 Ser Met Phe Leu Arg Phe Tyr Ser Asp Ala Ser Val Gln Arg Lys Gly  
 865 870 875 880  
 Phe Gln Ala Val His Ser Thr Glu Cys Gly Gly Arg Leu Lys Ala Glu  
 885 890 895  
 Val Gln Thr Lys Glu Leu Tyr Ser His Ala Gln Phe Gly Asp Asn Asn  
 900 905 910  
 Tyr Pro Ser Glu Ala Arg Cys Asp Trp Val Ile Val Ala Glu Asp Gly  
 915 920 925

Tyr Gly Val Glu Leu Thr Phe Arg Thr Phe Glu Val Glu Glu Glu Ala  
 930 935 940  
 Asp Cys Gly Tyr Asp Tyr Met Glu Ala Tyr Asp Gly Tyr Asp Ser Ser  
 945 950 955 960  
 Ala Pro Arg Leu Gly Arg Phe Cys Gly Ser Gly Pro Leu Glu Glu Ile  
 965 970 975  
 Tyr Ser Ala Gly Asp Ser Leu Met Ile Arg Phe Arg Thr Asp Asp Thr  
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 Ile Asn Lys Lys Gly Phe His Ala Arg Tyr Thr Ser Thr Lys Phe Gln  
 995 1000 1005  
 Asp Ala Leu His Met Lys Lys  
 1010 1015  
  
 <210> 98  
 <211> 823  
 <212> PRT  
 <213> Homo sapiens  
  
 <400> 98  
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 Pro Arg Pro Gly Arg Pro Leu Asp Leu Ala Asp Tyr Thr Tyr Asp Leu  
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 Ala Glu Glu Asp Asp Ser Glu Pro Leu Asn Tyr Lys Asp Pro Cys Lys  
 35 40 45  
 Ala Ala Ala Phe Leu Gly Asp Ile Ala Leu Asp Glu Glu Asp Leu Arg  
 50 55 60  
 Ala Phe Gln Val Gln Gln Ala Val Asp Leu Arg Arg His Thr Ala Arg  
 65 70 75 80  
 Lys Ser Ser Ile Lys Ala Ala Val Pro Gly Asn Thr Ser Thr Pro Ser  
 85 90 95  
 Cys Gln Ser Thr Asn Gly Gln Pro Gln Arg Gly Ala Cys Gly Arg Trp  
 100 105 110  
 Arg Gly Arg Ser Arg Ser Arg Arg Ala Ala Thr Ser Arg Pro Glu Arg  
 115 120 125  
 Val Trp Pro Asp Gly Val Ile Pro Phe Val Ile Gly Gly Asn Phe Thr  
 130 135 140  
 Gly Ser Gln Arg Ala Val Phe Arg Gln Ala Met Arg His Trp Glu Lys  
 145 150 155 160  
 His Thr Cys Val Thr Phe Leu Glu Arg Thr Asp Glu Asp Ser Tyr Ile  
 165 170 175

Val Phe Thr Tyr Arg Pro Cys Gly Cys Cys Ser Tyr Val Gly Arg Arg  
180 185 190  
Gly Gly Gly Pro Gln Ala Ile Ser Ile Gly Lys Asn Cys Asp Lys Phe  
195 200 205  
Gly Ile Val Val His Glu Leu Gly His Val Val Gly Phe Trp His Glu  
210 215 220  
His Thr Arg Pro Asp Arg Asp Arg His Val Ser Ile Val Arg Glu Asn  
225 230 235 240  
Ile Gln Pro Gly Gln Glu Tyr Asn Phe Leu Lys Met Glu Pro Gln Glu  
245 250 255  
Val Glu Ser Leu Gly Glu Thr Tyr Asp Phe Asp Ser Ile Met His Tyr  
260 265 270  
Ala Arg Asn Thr Phe Ser Arg Gly Ile Phe Leu Asp Thr Ile Val Pro  
275 280 285  
Lys Tyr Glu Val Asn Gly Val Lys Pro Pro Ile Gly Gln Arg Thr Arg  
290 295 300  
Leu Ser Lys Gly Asp Ile Ala Gln Ala Arg Lys Leu Tyr Lys Cys Pro  
305 310 315 320  
Ala Cys Gly Glu Thr Leu Gln Asp Ser Thr Gly Asn Phe Ser Ser Pro  
325 330 335  
Glu Tyr Pro Asn Gly Tyr Ser Ala His Met His Cys Val Trp Arg Ile  
340 345 350  
Ser Val Thr Pro Gly Glu Lys Ile Ile Leu Asn Phe Thr Ser Leu Asp  
355 360 365  
Leu Tyr Arg Ser Arg Leu Cys Trp Tyr Asp Tyr Val Glu Val Arg Asp  
370 375 380  
Gly Phe Trp Arg Lys Ala Pro Leu Arg Gly Arg Phe Cys Gly Ser Lys  
385 390 395 400  
Leu Pro Glu Pro Ile Val Ser Thr Asp Ser Arg Leu Trp Val Glu Phe  
405 410 415  
Arg Ser Ser Ser Asn Trp Val Gly Lys Gly Phe Phe Ala Val Tyr Glu  
420 425 430  
Ala Ile Cys Gly Gly Asp Val Lys Lys Asp Tyr Gly His Ile Gln Ser  
435 440 445  
Pro Asn Tyr Pro Asp Asp Tyr Arg Pro Ser Lys Val Cys Ile Trp Arg  
450 455 460  
Ile Gln Val Ser Glu Gly Phe His Val Gly Leu Thr Phe Gln Ser Phe  
465 470 475 480

Glu Ile Glu Arg His Asp Ser Cys Ala Tyr Asp Tyr Leu Glu Val Arg  
 485 490 495  
 Asp Gly His Ser Glu Ser Ser Thr Leu Ile Gly Arg Tyr Cys Gly Tyr  
 500 505 510  
 Glu Lys Pro Asp Asp Ile Lys Ser Thr Ser Ser Arg Leu Trp Leu Lys  
 515 520 525  
 Phe Val Ser Asp Gly Ser Ile Asn Lys Ala Gly Phe Ala Val Asn Phe  
 530 535 540  
 Phe Lys Glu Val Asp Glu Cys Ser Arg Pro Asn Arg Gly Gly Cys Glu  
 545 550 555 560  
 Gln Arg Cys Leu Asn Thr Leu Gly Ser Tyr Lys Cys Ser Cys Asp Pro  
 565 570 575  
 Gly Tyr Glu Leu Ala Pro Asp Lys Arg Arg Cys Glu Ala Ala Cys Gly  
 580 585 590  
 Gly Phe Leu Thr Lys Leu Asn Gly Ser Ile Thr Ser Pro Gly Trp Pro  
 595 600 605  
 Lys Glu Tyr Pro Pro Asn Lys Asn Cys Ile Trp Gln Leu Val Ala Pro  
 610 615 620  
 Thr Gln Tyr Arg Ile Ser Leu Gln Phe Asp Phe Phe Glu Thr Glu Gly  
 625 630 635 640  
 Asn Asp Val Cys Lys Tyr Asp Phe Val Glu Val Arg Ser Gly Leu Thr  
 645 650 655  
 Ala Asp Ser Lys Leu His Gly Lys Phe Cys Gly Ser Glu Lys Pro Glu  
 660 665 670  
 Val Ile Thr Ser Gln Tyr Asn Asn Met Arg Val Glu Phe Lys Ser Asp  
 675 680 685  
 Asn Thr Val Ser Lys Lys Gly Phe Lys Ala His Phe Phe Ser Val Leu  
 690 695 700  
 Glu Gly Ala Gly Asp Arg His Ser His Leu Ser Gly Leu Glu Leu Leu  
 705 710 715 720  
 Leu Cys Pro His Ala Leu Val Asp Thr Val Pro Ala Pro Pro Ser Ala  
 725 730 735  
 Leu His Gly Asp Thr His Ala His Thr His Thr His Val His Thr His  
 740 745 750  
 Cys Pro Ile Ala Gln Glu Thr Cys Arg Gly Pro Pro Leu Gly Ala Ser  
 755 760 765  
 Arg Leu Ser Pro Gln Gly Pro Gly His Leu Thr Leu Ala Pro Gln Glu  
 770 775 780

Gly Ser Tyr Leu Asp Phe Trp Asp Thr His Arg Gly Asp Pro Lys Pro  
 785 790 795 800

Arg Arg Arg Arg Lys Ser Leu Lys Thr Phe Ser Leu Thr Pro Ala Thr  
 805 810 815

Phe Arg Gly Ile Trp Ala Leu  
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<210> 99

<211> 1019

<212> PRT

<213> Xenopus laevis

<400> 99

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Cys Val Gly Leu Ile Leu Leu Gly Ala Ile Arg Leu Ser Leu Gly Leu  
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Asp Tyr Asp Leu Glu Ser Phe Asp Tyr Leu Met Glu Asp Asn Pro Glu  
 35 40 45

Glu Phe Asp Tyr Lys Asp Pro Cys Lys Ala Ala Ala Tyr Trp Gly Asp  
 50 55 60

Ile Ala Leu Asp Glu Asp Asp Leu Lys Trp Ile Phe Lys Asn Lys Ser  
 65 70 75 80

Asn Asp Leu Arg Asn Thr Arg His Asn Gln Thr His Pro Thr Thr Asp  
 85 90 95

Asn Phe Ser Glu Lys Leu Gly Thr Gly Ser Gln Asn Glu Thr Ser Ser  
 100 105 110

Asn Leu Asn Ser Lys Lys Val Lys Lys Gly Ser Arg Leu Lys Leu Leu  
 115 120 125

Ile Ala Glu Lys Ala Ala Thr Glu Thr Asn Ser Thr Phe Gln Val Gln  
 130 135 140

Thr Ser Asn Asp Arg Val Arg Arg Ala Ala Thr Ser Arg Thr Glu Arg  
 145 150 155 160

Ile Trp Pro Gly Gly Ile Ile Pro Tyr Ala Ile Ala Gly Asn Phe Thr  
 165 170 175

Gly Thr Gln Arg Ala Ile Phe Lys Gln Ala Met Arg His Trp Lys Lys  
 180 185 190

His Thr Cys Val Thr Phe Val Glu Arg Thr Asp Glu Glu Ser Phe Ile  
 195 200 205

Val Phe Thr Tyr Arg Pro Cys Gly Cys Cys Ser Tyr Val Gly Arg Arg



210	215	220
Gly Gly Gly Pro Gln Ala Ile Ser Ile Gly Lys Asn Cys Asp Lys Phe 225 230 235 240		
Gly Ile Val Val His Glu Leu Gly His Val Val Gly Phe Trp His Glu 245 250 255		
His Thr Arg Pro Asp Arg Asp Glu His Val Ser Ile Ile Arg Glu Asn 260 265 270		
Ile Gln Pro Gly Gln Glu Tyr Asn Phe Leu Lys Met Glu Pro Gly Glu 275 280 285		
Val Ser Ser Leu Gly Glu Thr Tyr Asp Phe Asp Ser Ile Met His Tyr 290 295 300		
Ala Arg Asn Thr Phe Ser Arg Gly Val Phe Leu Asp Thr Ile Leu Pro 305 310 315 320		
Arg Arg Ile Asp Thr Ser Val Arg Pro Thr Ile Gly Gln Arg Ile Arg 325 330 335		
Leu Ser Gln Gly Asp Ile Ala Gln Ala Lys Lys Leu Tyr Lys Cys Pro 340 345 350		
Ala Cys Gly Glu Thr Leu Gln Asp Ser Ser Gly Asn Phe Ser Ala Pro 355 360 365		
Gly Tyr Pro Ser Gly Tyr Pro Ser Tyr Thr His Cys Ile Trp Arg Ile 370 375 380		
Ser Val Thr Pro Gly Glu Lys Ile Ile Leu Asn Phe Thr Thr Met Asp 385 390 395 400		
Leu Phe Lys Ser Arg Leu Cys Trp Tyr Asp Tyr Ile Glu Ile Arg Asp 405 410 415		
Gly Tyr Trp Arg Lys Ala Ala Leu Leu Gly Arg Leu Cys Gly Asp Lys 420 425 430		
Leu Pro Asp Pro Ile Ile Ser Ser Asp Ser Lys Leu Trp Ile Glu Phe 435 440 445		
Arg Ser Ser Ser Asn Ile Leu Gly Lys Gly Phe Phe Ala Ala Tyr Glu 450 455 460		
Ala Ile Cys Gly Gly Asp Ile Lys Lys Asp Ser Gly Gln Ile Gln Ser 465 470 475 480		
Pro Asn Tyr Pro Asp Asp Tyr Arg Pro Ala Lys Glu Cys Ile Trp Lys 485 490 495		
Ile Thr Val Ser Glu Gly Phe Leu Val Gly Leu Ser Phe Gln Ala Phe 500 505 510		
Glu Ile Glu Arg His Asp Asn Cys Ala Tyr Asp Tyr Leu Glu Val Arg		

515					520					525					
Asp	Gly	Phe	Ser	Glu	Asp	His	Ala	Leu	Ile	Gly	Arg	Phe	Cys	Gly	Tyr
530					535					540					
Glu	Lys	Pro	Glu	Asp	Ile	Lys	Ser	Thr	Ser	Asn	Lys	Leu	Trp	Ile	Lys
545					550					555					560
Phe	Ala	Ser	Asp	Gly	Ser	Ile	Asn	Lys	Ala	Gly	Phe	Ser	Ala	Asn	Phe
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Phe	Lys	Glu	Met	Asp	Glu	Cys	Ser	Arg	Pro	Asp	Asn	Gly	Gly	Cys	Ser
			580					585					590		
Gln	Arg	Cys	Val	Asn	Thr	Leu	Gly	Ser	Tyr	Lys	Cys	Val	Cys	Glu	Pro
		595					600					605			
Gly	Phe	Glu	Leu	Thr	Ala	Asp	Lys	Lys	Ser	Cys	Glu	Ala	Ala	Cys	Gly
	610					615					620				
Gly	Phe	Ile	Thr	Gln	Leu	Asn	Gly	Thr	Ile	Thr	Ser	Pro	Gly	Trp	Pro
625					630					635					640
Lys	Glu	Tyr	Pro	Thr	Asn	Lys	Asn	Cys	Val	Trp	Gln	Val	Val	Ala	Pro
				645					650					655	
Ala	Gln	Tyr	Arg	Ile	Ser	Leu	Gln	Phe	Glu	Val	Phe	Glu	Leu	Glu	Gly
			660					665					670		
Asn	Asp	Val	Cys	Lys	Tyr	Asp	Tyr	Leu	Glu	Ile	Arg	Ser	Gly	Leu	Ser
		675					680					685			
Ser	Glu	Ser	Lys	Leu	His	Gly	Lys	Phe	Cys	Gly	Pro	Glu	Lys	Pro	Glu
	690					695					700				
Val	Ile	Thr	Ser	Gln	Gly	Asn	Thr	Val	Arg	Ile	Glu	Phe	Lys	Ser	Asp
705					710					715					720
Asn	Thr	Val	Ser	Lys	Lys	Gly	Phe	Lys	Ala	Asn	Phe	Phe	Ser	Asp	Lys
				725					730					735	
Asp	Glu	Cys	Ser	Lys	Asp	Asn	Gly	Gly	Cys	Gln	His	Asp	Cys	Val	Asn
			740					745					750		
Thr	Phe	Gly	Ser	Tyr	Ile	Cys	Gln	Cys	Lys	Asn	Gly	Phe	Ile	Leu	His
		755					760					765			
Glu	Asn	Gly	His	Asp	Cys	Lys	Glu	Ala	Gly	Cys	Glu	Gln	Lys	Leu	Leu
	770					775					780				
Asn	Ala	Glu	Gly	Thr	Ile	Ser	Ser	Pro	Asn	Trp	Pro	Glu	Lys	Tyr	Pro
785					790					795					800
Ser	Arg	Lys	Glu	Cys	Thr	Trp	Asp	Ile	Ser	Val	Thr	Ala	Gly	His	Arg
				805					810					815	
Val	Lys	Leu	Val	Phe	Thr	Asp	Phe	Glu	Ile	Glu	Gln	His	Gln	Glu	Cys

820					825					830					
Ala	Tyr	Asp	His	Leu	Glu	Leu	Tyr	Asp	Gly	Pro	Asn	Gly	Lys	Ala	Ala
		835					840					845			
Ile	Leu	Gly	Arg	Phe	Cys	Gly	Ser	Lys	Glu	Pro	Ser	Pro	Val	Val	Ala
	850					855					860				
Ser	Thr	Asn	Asn	Met	Phe	Leu	Arg	Phe	Tyr	Ser	Asp	Ala	Ser	Val	Gln
865						870					875				880
Arg	Lys	Gly	Phe	Gln	Ala	Lys	Tyr	Ser	Pro	Glu	Cys	Gly	Gly	Arg	Leu
				885					890					895	
Lys	Ala	Glu	Ile	Gln	Thr	Asn	Asp	Ile	Tyr	Ser	His	Ala	Gln	Phe	Gly
			900					905					910		
Asp	Asn	Asn	Tyr	Pro	Val	Gln	Ser	Asn	Cys	Glu	Trp	Val	Ile	Val	Ala
		915					920					925			
Glu	Asp	Gly	Tyr	Gly	Val	Glu	Leu	Ile	Phe	Gln	Thr	Phe	Glu	Ile	Glu
	930					935					940				
Glu	Glu	Ser	Asp	Cys	Gly	Tyr	Asp	Tyr	Met	Glu	Val	Tyr	Asp	Gly	Tyr
945				950					955					960	
Asp	Ser	Thr	Ala	Pro	Arg	Leu	Gly	Arg	Tyr	Cys	Gly	Ser	Gly	Pro	Pro
				965					970					975	
Glu	Glu	Met	Tyr	Ser	Ala	Gly	Asp	Ser	Ile	Met	Ile	Arg	Phe	His	Thr
		980						985					990		
Asp	Asp	Thr	Ile	Asn	Lys	Lys	Gly	Phe	His	Gly	Gln	Tyr	Thr	Ser	Thr
	995					1000					1005				
Lys	Phe	Gln	Asp	Ala	Leu	His	Met	Arg	Arg	Lys					
1010					1015										

<210> 100  
 <211> 493  
 <212> PRT  
 <213> Rattus norvegicus

<400> 100  
 Met Ala Asp Ser Lys Pro Leu Arg Thr Leu Asp Gly Asp Pro Val Ala  
 1 5 10 15  
 Val Glu Ala Leu Leu Arg Asp Val Phe Gly Ile Val Val Asp Glu Ala  
 20 25 30  
 Ile Arg Lys Gly Thr Asn Ala Ser Glu Lys Val Cys Glu Trp Lys Glu  
 35 40 45  
 Pro Glu Glu Leu Lys Gln Leu Leu Asp Leu Glu Leu Gln Ser Gln Gly  
 50 55 60

Glu	Ser	Arg	Glu	Arg	Ile	Leu	Glu	Arg	Cys	Arg	Ala	Val	Ile	His	Tyr	65	70	75	80
Ser	Val	Lys	Thr	Gly	His	Pro	Arg	Phe	Phe	Asn	Gln	Leu	Phe	Ser	Gly	85	90	95	
Leu	Asp	Pro	His	Ala	Leu	Ala	Gly	Arg	Ile	Ile	Thr	Glu	Ser	Leu	Asn	100	105	110	
Thr	Ser	Gln	Tyr	Thr	Tyr	Glu	Ile	Ala	Pro	Val	Phe	Val	Leu	Met	Glu	115	120	125	
Glu	Glu	Val	Leu	Lys	Lys	Leu	Arg	Ala	Leu	Val	Gly	Trp	Asn	Thr	Gly	130	135	140	
Asp	Gly	Val	Phe	Cys	Pro	Gly	Gly	Ser	Ile	Ser	Asn	Met	Tyr	Ala	Ile	145	150	155	160
Asn	Leu	Ala	Arg	Phe	Gln	Arg	Tyr	Pro	Asp	Cys	Lys	Gln	Arg	Gly	Leu	165	170	175	
Arg	Ala	Leu	Pro	Pro	Leu	Ala	Leu	Phe	Thr	Ser	Lys	Glu	Cys	His	Tyr	180	185	190	
Ser	Ile	Thr	Lys	Gly	Ala	Ala	Phe	Leu	Gly	Leu	Gly	Thr	Asp	Ser	Val	195	200	205	
Arg	Val	Val	Lys	Ala	Asp	Glu	Arg	Gly	Lys	Met	Ile	Pro	Glu	Asp	Leu	210	215	220	
Glu	Arg	Gln	Ile	Ser	Leu	Ala	Glu	Ala	Glu	Gly	Ser	Val	Pro	Phe	Leu	225	230	235	240
Val	Ser	Ala	Thr	Ser	Gly	Thr	Thr	Val	Leu	Gly	Ala	Phe	Asp	Pro	Leu	245	250	255	
Asp	Ala	Ile	Ala	Asp	Val	Cys	Gln	Arg	His	Gly	Leu	Trp	Leu	His	Val	260	265	270	
Asp	Ala	Ala	Trp	Gly	Gly	Ser	Val	Leu	Leu	Ser	Arg	Thr	His	Arg	His	275	280	285	
Leu	Leu	Asp	Gly	Ile	Gln	Arg	Ala	Asp	Ser	Val	Ala	Trp	Asn	Pro	His	290	295	300	
Lys	Leu	Leu	Ala	Ala	Gly	Leu	Gln	Cys	Ser	Ala	Leu	Leu	Leu	Arg	Asp	305	310	315	320
Thr	Ser	Asn	Leu	Leu	Lys	Arg	Cys	His	Gly	Ser	Gln	Ala	Ser	Tyr	Leu	325	330	335	
Phe	Gln	Gln	Asp	Lys	Phe	Tyr	Asn	Val	Ala	Leu	Asp	Thr	Gly	Asp	Lys	340	345	350	
Val	Val	Gln	Cys	Gly	Arg	Arg	Val	Asp	Cys	Leu	Lys	Leu	Trp	Leu	Met	355	360	365	

Trp Lys Ala Gln Gly Gly Gln Gly Leu Glu Trp Arg Ile Asp Gln Ala  
 370 375 380  
 Phe Ala Leu Thr Arg Tyr Leu Val Glu Glu Ile Lys Lys Arg Glu Gly  
 385 390 395 400  
 Phe Glu Leu Val Met Glu Pro Glu Phe Val Asn Val Cys Phe Trp Phe  
 405 410 415  
 Val Pro Pro Ser Leu Arg Gly Lys Lys Glu Ser Pro Asp Tyr Ser Gln  
 420 425 430  
 Arg Leu Ser Gln Val Ala Pro Val Leu Lys Glu Arg Met Val Lys Lys  
 435 440 445  
 Gly Thr Met Met Ile Gly Tyr Gln Pro His Gly Thr Arg Ala Asn Phe  
 450 455 460  
 Phe Arg Met Val Val Ala Asn Pro Ile Leu Val Gln Ala Asp Ile Asp  
 465 470 475 480  
 Phe Leu Leu Gly Glu Leu Glu Arg Leu Gly Gln Asp Leu  
 485 490

<210> 101  
 <211> 493  
 <212> PRT  
 <213> Mus musculus

<400> 101  
 Met Ala Asp Ser Lys Pro Leu Arg Thr Leu Asp Gly Asp Pro Val Ala  
 1 5 10 15  
 Val Glu Ala Leu Leu Gln Asp Val Phe Gly Ile Val Val Asp Glu Ala  
 20 25 30  
 Ile Leu Lys Gly Thr Ser Ala Ser Glu Lys Val Cys Glu Trp Lys Glu  
 35 40 45  
 Pro Glu Glu Leu Lys Gln Leu Leu Asp Leu Glu Leu Gln Ser Gln Gly  
 50 55 60  
 Glu Ser Arg Glu Gln Ile Leu Glu Arg Cys Arg Thr Val Ile His Tyr  
 65 70 75 80  
 Ser Val Lys Thr Gly His Pro Arg Phe Phe Asn Gln Leu Phe Ser Gly  
 85 90 95  
 Leu Asp Pro His Ala Leu Ala Gly Arg Ile Ile Thr Glu Ser Leu Asn  
 100 105 110  
 Thr Ser Gln Tyr Thr Tyr Glu Ile Ala Pro Val Phe Val Leu Met Glu  
 115 120 125  
 Glu Glu Val Leu Lys Lys Leu Arg Ala Leu Val Gly Trp Asn Ser Gly  
 130 135 140

Asp	Gly	Val	Phe	Cys	Pro	Gly	Gly	Ser	Ile	Ser	Asn	Met	Tyr	Ala	Met		
145					150					155					160		
Asn	Leu	Ala	Arg	Phe	Gln	Arg	Tyr	Pro	Asp	Cys	Lys	Gln	Arg	Gly	Leu		
				165					170						175		
Arg	Ala	Leu	Pro	Pro	Leu	Ala	Leu	Phe	Thr	Ser	Lys	Glu	Cys	His	Tyr		
			180					185						190			
Ser	Ile	Thr	Lys	Gly	Ala	Ala	Phe	Leu	Gly	Leu	Gly	Thr	Asp	Ser	Val		
		195					200						205				
Arg	Val	Val	Lys	Ala	Asp	Glu	Arg	Gly	Arg	Met	Ile	Pro	Glu	Asp	Leu		
	210					215					220						
Glu	Arg	Gln	Ile	Ile	Leu	Ala	Glu	Ala	Glu	Gly	Ser	Val	Pro	Phe	Leu		
225					230					235					240		
Val	Ser	Ala	Thr	Ser	Gly	Thr	Thr	Val	Leu	Gly	Ala	Phe	Asp	Pro	Leu		
				245					250					255			
Asp	Ala	Ile	Ala	Asp	Val	Cys	Gln	Arg	His	Gly	Leu	Trp	Phe	His	Val		
			260					265						270			
Asp	Ala	Ala	Trp	Gly	Gly	Ser	Val	Leu	Leu	Ser	Arg	Thr	His	Arg	His		
		275					280						285				
Leu	Leu	Asp	Gly	Ile	Gln	Arg	Ala	Asp	Ser	Val	Ala	Trp	Asn	Pro	His		
	290					295					300						
Lys	Leu	Leu	Ala	Ala	Gly	Leu	Gln	Cys	Ser	Ala	Leu	Leu	Leu	Arg	Asp		
305					310					315					320		
Thr	Ser	Asn	Leu	Leu	Lys	Arg	Cys	His	Gly	Ser	Gln	Ala	Ser	Tyr	Leu		
			325						330					335			
Phe	Gln	Gln	Asp	Lys	Phe	Tyr	Asp	Val	Ala	Leu	Asp	Thr	Gly	Asp	Lys		
			340					345						350			
Val	Val	Gln	Cys	Gly	Arg	Arg	Val	Asp	Cys	Leu	Lys	Leu	Trp	Leu	Met		
		355					360						365				
Trp	Lys	Ala	Gln	Gly	Gly	Gln	Gly	Leu	Glu	Arg	Arg	Ile	Asp	Gln	Ala		
	370					375						380					
Phe	Ala	Leu	Thr	Arg	Tyr	Leu	Val	Glu	Glu	Ile	Lys	Lys	Arg	Glu	Gly		
385					390					395					400		
Phe	Glu	Leu	Val	Met	Glu	Pro	Glu	Phe	Val	Asn	Val	Cys	Phe	Trp	Phe		
			405					410						415			
Val	Pro	Pro	Ser	Leu	Arg	Gly	Lys	Lys	Glu	Ser	Pro	Asp	Tyr	Ser	Gln		
			420					425					430				
Arg	Leu	Ser	Gln	Val	Ala	Pro	Val	Leu	Lys	Glu	Arg	Met	Val	Lys	Lys		
		435					440					445					

Gly Thr Met Met Ile Gly Tyr Gln Pro His Gly Thr Arg Ala Asn Phe  
 450 455 460

Phe Arg Met Val Val Ala Asn Pro Ile Leu Ala Gln Ala Asp Ile Asp  
 465 470 475 480

Phe Leu Leu Gly Glu Leu Glu Leu Leu Gly Gln Asp Leu  
 485 490

<210> 102

<211> 493

<212> PRT

<213> Homo sapiens

<400> 102

Met Ala Asp Ser Glu Ala Leu Pro Ser Leu Ala Gly Asp Pro Val Ala  
 1 5 10 15

Val Glu Ala Leu Leu Arg Ala Val Phe Gly Val Val Val Asp Glu Ala  
 20 25 30

Ile Gln Lys Gly Thr Ser Val Ser Gln Lys Val Cys Glu Trp Lys Glu  
 35 40 45

Pro Glu Glu Leu Lys Gln Leu Leu Asp Leu Glu Leu Arg Ser Gln Gly  
 50 55 60

Glu Ser Gln Lys Gln Ile Leu Glu Arg Cys Arg Ala Val Ile Arg Tyr  
 65 70 75 80

Ser Val Lys Thr Gly His Pro Arg Phe Phe Asn Gln Leu Phe Ser Gly  
 85 90 95

Leu Asp Pro His Ala Leu Ala Gly Arg Ile Ile Thr Glu Ser Leu Asn  
 100 105 110

Thr Ser Gln Tyr Thr Tyr Glu Ile Ala Pro Val Phe Val Leu Met Glu  
 115 120 125

Glu Glu Val Leu Arg Lys Leu Arg Ala Leu Val Gly Trp Ser Ser Gly  
 130 135 140

Asp Gly Ile Phe Cys Pro Gly Gly Ser Ile Ser Asn Met Tyr Ala Val  
 145 150 155 160

Asn Leu Ala Arg Tyr Gln Arg Tyr Pro Asp Cys Lys Gln Arg Gly Leu  
 165 170 175

Arg Thr Leu Pro Pro Leu Ala Leu Phe Thr Ser Lys Glu Cys His Tyr  
 180 185 190

Ser Ile Gln Lys Gly Ala Ala Phe Leu Gly Leu Gly Thr Asp Ser Val  
 195 200 205

Arg Val Val Lys Ala Asp Glu Arg Gly Lys Met Val Pro Glu Asp Leu

210	215	220
Glu Arg Gln Ile Gly Met Ala Glu Ala Glu Gly Ala Val Pro Phe Leu 225 230 235 240		
Val Ser Ala Thr Ser Gly Thr Thr Val Leu Gly Ala Phe Asp Pro Leu 245 250 255		
Glu Ala Ile Ala Asp Val Cys Gln Arg His Gly Leu Trp Leu His Val 260 265 270		
Asp Ala Ala Trp Gly Gly Ser Val Leu Leu Ser Gln Thr His Arg His 275 280 285		
Leu Leu Asp Gly Ile Gln Arg Ala Asp Ser Val Ala Trp Asn Pro His 290 295 300		
Lys Leu Leu Ala Ala Gly Leu Gln Cys Ser Ala Leu Leu Leu Gln Asp 305 310 315 320		
Thr Ser Asn Leu Leu Lys Arg Cys His Gly Ser Gln Ala Ser Tyr Leu 325 330 335		
Phe Gln Gln Asp Lys Phe Tyr Asp Val Ala Leu Asp Thr Gly Asp Lys 340 345 350		
Val Val Gln Cys Gly Arg Arg Val Asp Cys Leu Lys Leu Trp Leu Met 355 360 365		
Trp Lys Ala Gln Gly Asp Gln Gly Leu Glu Arg Arg Ile Asp Gln Ala 370 375 380		
Phe Val Leu Ala Arg Tyr Leu Val Glu Glu Met Lys Lys Arg Glu Gly 385 390 395 400		
Phe Glu Leu Val Met Glu Pro Glu Phe Val Asn Val Cys Phe Trp Phe 405 410 415		
Val Pro Pro Ser Leu Arg Gly Lys Gln Glu Ser Pro Asp Tyr His Glu 420 425 430		
Arg Leu Ser Lys Val Ala Pro Val Leu Lys Glu Arg Met Val Lys Glu 435 440 445		
Gly Ser Met Met Ile Gly Tyr Gln Pro His Gly Thr Arg Gly Asn Phe 450 455 460		
Phe Arg Val Val Val Ala Asn Ser Ala Leu Thr Cys Ala Asp Met Asp 465 470 475 480		
Phe Leu Leu Asn Glu Leu Glu Arg Leu Gly Gln Asp Leu 485 490		

<210> 103  
 <211> 493  
 <212> PRT



<213> Homo sapiens

<400> 103

Met	Ala	Asp	Ser	Glu	Ala	Leu	Pro	Ser	Leu	Ala	Gly	Asp	Pro	Val	Ala	
1				5					10					15		
Val	Glu	Ala	Leu	Leu	Arg	Ala	Val	Phe	Gly	Val	Val	Val	Asp	Glu	Ala	
			20					25					30			
Ile	Gln	Lys	Gly	Thr	Ser	Val	Ser	Gln	Lys	Val	Cys	Glu	Trp	Lys	Glu	
		35					40					45				
Pro	Glu	Glu	Leu	Lys	Gln	Leu	Leu	Asp	Leu	Glu	Leu	Arg	Ser	Gln	Gly	
	50					55					60					
Glu	Ser	Gln	Lys	Gln	Ile	Leu	Glu	Arg	Cys	Arg	Ala	Val	Ile	Arg	Tyr	
65					70					75					80	
Ser	Val	Lys	Thr	Gly	His	Pro	Arg	Phe	Phe	Asn	Gln	Leu	Phe	Ser	Gly	
				85					90					95		
Leu	Asp	Pro	His	Ala	Leu	Ala	Gly	Arg	Ile	Ile	Thr	Glu	Ser	Leu	Asn	
			100					105						110		
Thr	Ser	Gln	Tyr	Thr	Tyr	Glu	Ile	Ala	Pro	Val	Phe	Val	Leu	Met	Glu	
		115					120					125				
Glu	Glu	Val	Leu	Arg	Lys	Leu	Arg	Ala	Leu	Val	Gly	Trp	Ser	Ser	Gly	
	130					135					140					
Asp	Gly	Ile	Phe	Cys	Pro	Gly	Gly	Ser	Ile	Ser	Asn	Met	Tyr	Ala	Val	
145					150					155					160	
Asn	Leu	Ala	Arg	Tyr	Gln	Arg	Tyr	Pro	Asp	Cys	Lys	Gln	Arg	Gly	Leu	
			165						170					175		
Arg	Thr	Leu	Pro	Pro	Leu	Ala	Leu	Phe	Thr	Ser	Lys	Glu	Cys	His	Tyr	
		180						185					190			
Ser	Ile	Gln	Lys	Gly	Ala	Ala	Phe	Leu	Gly	Leu	Gly	Thr	Asp	Ser	Val	
		195					200					205				
Arg	Val	Val	Lys	Ala	Asp	Glu	Arg	Gly	Lys	Met	Val	Pro	Glu	Asp	Leu	
	210					215					220					
Glu	Arg	Gln	Ile	Gly	Met	Ala	Glu	Ala	Glu	Gly	Ala	Val	Pro	Phe	Leu	
225					230					235					240	
Val	Ser	Ala	Thr	Ser	Gly	Thr	Thr	Val	Leu	Gly	Ala	Phe	Asp	Pro	Leu	
				245					250				255			
Gly	Ala	Ile	Ala	Asp	Val	Cys	Gln	Arg	His	Gly	Leu	Trp	Leu	His	Val	
		260					265					270				
Asp	Ala	Ala	Trp	Gly	Gly	Ser	Val	Leu	Leu	Ser	Gln	Thr	His	Arg	His	
	275						280					285				

Leu Leu Asp Gly Ile Gln Arg Ala Asp Ser Val Ala Trp Asn Pro His  
 290 295 300  
 Lys Leu Leu Ala Ala Gly Leu Gln Cys Ser Ala Leu Leu Leu Gln Asp  
 305 310 315 320  
 Thr Ser Asn Leu Leu Lys Arg Cys His Gly Ser Gln Ala Ser Tyr Leu  
 325 330 335  
 Phe Gln Gln Asp Lys Phe Tyr Asp Val Ala Leu Asp Thr Gly Asp Lys  
 340 345 350  
 Val Val Gln Cys Gly Arg Arg Val Asp Cys Leu Lys Leu Trp Leu Met  
 355 360 365  
 Trp Lys Ala Gln Gly Asp Gln Gly Leu Glu Arg Arg Ile Asp Gln Ala  
 370 375 380  
 Phe Val Leu Ala Arg Tyr Leu Val Glu Glu Met Lys Lys Arg Glu Gly  
 385 390 395 400  
 Phe Glu Leu Val Met Glu Pro Glu Phe Val Asn Val Cys Phe Trp Phe  
 405 410 415  
 Val Pro Pro Ser Leu Arg Gly Lys Gln Glu Ser Pro Asp Tyr His Glu  
 420 425 430  
 Arg Leu Ser Lys Val Ala Pro Val Leu Lys Glu Arg Met Val Lys Glu  
 435 440 445  
 Gly Ser Met Met Ile Gly Tyr Gln Pro His Gly Thr Arg Gly Asn Phe  
 450 455 460  
 Phe Arg Val Val Val Ala Asn Ser Ala Leu Thr Cys Ala Asp Met Asp  
 465 470 475 480  
 Phe Leu Leu Asn Glu Leu Glu Arg Leu Gly Gln Asp Leu  
 485 490

<210> 104  
 <211> 493  
 <212> PRT  
 <213> Homo sapiens

<400> 104  
 Met Ala Asp Ser Glu Ala Leu Pro Ser Leu Ala Gly Asp Pro Val Ala  
 1 5 10 15  
 Val Glu Ala Leu Leu Arg Ala Val Phe Gly Val Val Val Asp Glu Ala  
 20 25 30  
 Ile Gln Lys Gly Thr Ser Val Ser Gln Lys Val Cys Glu Trp Lys Glu  
 35 40 45  
 Pro Glu Glu Leu Lys Gln Leu Leu Asp Leu Glu Leu Arg Ser Gln Gly  
 50 55 60

Glu	Ser	Gln	Lys	Gln	Ile	Leu	Glu	Arg	Cys	Arg	Ala	Val	Ile	Arg	Tyr	65	70	75	80
Ser	Val	Lys	Thr	Gly	His	Pro	Arg	Phe	Phe	Asn	Gln	Leu	Phe	Ser	Gly	85	90	95	
Leu	Asp	Pro	His	Ala	Leu	Ala	Gly	Arg	Ile	Ile	Thr	Glu	Ser	Leu	Asn	100	105	110	
Thr	Ser	Gln	Tyr	Thr	Tyr	Glu	Ile	Ala	Pro	Val	Phe	Val	Leu	Met	Glu	115	120	125	
Glu	Glu	Val	Leu	Arg	Lys	Leu	Arg	Ala	Leu	Val	Gly	Trp	Ser	Ser	Gly	130	135	140	
Asp	Gly	Ile	Phe	Cys	Pro	Gly	Gly	Ser	Ile	Ser	Asn	Met	Tyr	Ala	Val	145	150	155	160
Asn	Leu	Ala	Arg	Tyr	Gln	Arg	Tyr	Pro	Asp	Cys	Lys	Gln	Arg	Gly	Leu	165	170		175
Arg	Thr	Leu	Pro	Pro	Leu	Ala	Leu	Phe	Thr	Ser	Lys	Glu	Cys	His	Tyr	180	185		190
Ser	Ile	Gln	Lys	Gly	Ala	Ala	Phe	Leu	Gly	Leu	Gly	Thr	Asp	Ser	Val	195	200		205
Arg	Val	Val	Lys	Ala	Asp	Glu	Arg	Gly	Lys	Met	Val	Pro	Glu	Asp	Leu	210	215		220
Glu	Arg	Gln	Ile	Gly	Met	Ala	Glu	Ala	Glu	Gly	Ala	Val	Pro	Phe	Leu	225	230	235	240
Val	Ser	Ala	Thr	Ser	Gly	Thr	Thr	Val	Leu	Gly	Ala	Phe	Asp	Pro	Leu	245	250		255
Glu	Ala	Ile	Ala	Asp	Val	Cys	Gln	Arg	His	Gly	Leu	Trp	Leu	His	Val	260	265		270
Asp	Ala	Ala	Trp	Gly	Gly	Ser	Val	Leu	Leu	Ser	Gln	Thr	His	Arg	His	275	280		285
Leu	Leu	Asp	Gly	Ile	Gln	Arg	Ala	Asp	Ser	Val	Ala	Trp	Asn	Pro	His	290	295		300
Lys	Leu	Leu	Ala	Ala	Gly	Leu	Gln	Cys	Ser	Ala	Leu	Leu	Leu	Gln	Asp	305	310	315	320
Thr	Ser	Asn	Leu	Leu	Lys	Arg	Cys	His	Gly	Ser	Gln	Ala	Ser	Tyr	Leu	325	330		335
Phe	Gln	Gln	Asp	Lys	Phe	Tyr	Asp	Val	Ala	Leu	Asp	Thr	Gly	Asp	Lys	340	345		350
Val	Val	Gln	Cys	Gly	Arg	Arg	Val	Asp	Cys	Leu	Lys	Leu	Trp	Leu	Met	355	360		365

Trp Lys Ala Gln Gly Asp Gln Gly Pro Glu Arg Arg Ile Asp Gln Ala  
 370 375 380  
 Phe Val Leu Ala Arg Tyr Leu Val Glu Glu Met Lys Lys Arg Glu Gly  
 385 390 395 400  
 Phe Glu Leu Val Met Glu Pro Glu Phe Val Asn Val Cys Phe Trp Phe  
 405 410 415  
 Val Pro Pro Ser Leu Arg Gly Lys Gln Glu Ser Pro Asp Tyr His Glu  
 420 425 430  
 Arg Leu Ser Lys Val Ala Pro Val Leu Lys Glu Arg Met Val Lys Glu  
 435 440 445  
 Gly Ser Met Met Ile Gly Tyr Gln Pro His Gly Thr Arg Gly Asn Phe  
 450 455 460  
 Phe Arg Val Val Val Ala Asn Ser Ala Leu Thr Cys Ala Asp Met Asp  
 465 470 475 480  
 Phe Leu Leu Asn Glu Leu Glu Arg Leu Gly Gln Asp Leu  
 485 490

<210> 105  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:oligonucleotide  
 primer

<400> 105  
 ccatgtggca gctgaggctt cat 23

<210> 106  
 <211> 25  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:oligonucleotide  
 primer

<400> 106  
 aaagccccag gtcctcttgc tagct 25

<210> 107  
 <211> 27  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:oligonucleotide  
       primer  
  
 <400> 107  
 ggatgaacca gactttgaat agcagtg 27  
  
  
 <210> 108  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence:oligonucleotide  
       primer  
  
 <400> 108  
 ggctctcaag ccccatctc 20  
  
  
 <210> 109  
 <211> 28  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence:oligonucleotide  
       primer  
  
 <400> 109  
 atgcgaagtc actcttacct ctgatgat 28  
  
  
 <210> 110  
 <211> 30  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence:oligonucleotide  
       primer  
  
 <400> 110  
 gggagctgat cttgagttat ttaacatagc 30  
  
  
 <210> 111  
 <211> 21  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence:oligonucleotide  
       primer  
  
 <400> 111

ctgaatggaa ccatcaccag c 21

<210> 112  
<211> 26  
<212> DNA  
<213> Artificial Sequence

<220>  
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<210> 114  
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<210> 115  
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<210> 116  
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    primer

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<400> 121
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<210> 122
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23

<210> 123
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25

<210> 124
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<400> 124
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<210> 143  
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<210> 144  
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<400> 144  
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<210> 145  
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<220>  
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<210> 146  
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<210> 147  
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<210> 156  
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<220>  
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<400> 156  
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<210> 157  
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<220>  
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<400> 157  
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<210> 158  
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<400> 158  
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<210> 159  
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<400> 159  
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<210> 160  
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19

<210> 165

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<212> DNA

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<400> 165

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23

<210> 166

<211> 19

<212> DNA

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<220>

<223> Description of Artificial Sequence:  
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<400> 166

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19

<210> 167

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<220>

<223> Description of Artificial Sequence:  
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<400> 167

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33